

The Dental Digest.

Vol. V.

CHICAGO, APRIL, 1899.

No. 4.

Original Contributions.

SUBMARINE COHESIVE GOLD.

CLINIC GIVEN BEFORE THE DENVER DENTAL SOCIETY, JAN. 12, 1899, BY
SYLVANUS DAVIS, D.D.S., DENVER.

Mr. President, I feel some somewhat embarrassed in giving a clinic which is in direct opposition to what has been taught ever since cohesive gold came in use. Submarine cohesive gold—who ever heard of it? Well, it is no different from any other gold, and I claim that as good a filling, perhaps a better one, can be made with gold wet as dry, and I shall try and demonstrate this fact to-night.

First, let me explain some of the peculiarities of the different styles of gold. All forms of felt or crystal gold feel soft under the plugger, and pack like snow, and non-cohesive gold does much the same, but cohesive gold feels harsh, although it is really softer than non-cohesive.

We wish to bring the gold in juxtaposition, and it would seem a simple thing to do, yet it is almost an impossibility to bring cohesive gold together *dry*. You cannot see anything between my hands, but an agent is there under certain conditions which will cause cyclones, will pick up a man and hurl him into space, and let him down without disturbing a hair of his head. I will draw on the blackboard the shape of a gold pellet. Put this pellet into water, and although gold is the heaviest of metals, it will swim around like a duck.

You begin on this pellet with a small plugger at one end and finish at the other—what have you got under that pellet? Compressed air, about 140 pounds to the square inch, bridging over air in all cohesive fillings. The rubber-dam is in place and you finish a fine looking filling in a room about 70 degrees Fahrenheit, then the old lady goes home tired out, takes a drink of tea at about 100 degrees, expanding the already compressed air, and the result is a cyclone, and your filling is full of pits. In soft foil the air passes out be-

tween the layers, in felt between the fibers or crystals, but the follicles in the cohesive gold will retain the air, regardless of all force.

Now I wish to ask a scientific question. Which is the easier to displace, air or water? You remember in boyhood diving off the shore, and how you could swim much faster under water than when you came in contact with the air. Take a dry and a wet piece of sponge, put them under pressure, and the air will be compressed, but the water cannot be, but will roll away.

Here is a bicuspid with a cavity in the approximal surface. I invest in plaster and build a cup around it, give it a coating of shellac, boil my cohesive gold in water until it sinks, to expel all the air (this is hardly necessary), put my gold into the cup with the tooth and fill it with water. You are sure now the gold is wet, so I commence with my ordinary cohesive pluggers and condense the gold, keeping it well under the water, and build it up, contouring easily with hand pressure. You see me now burnishing it off smooth without the depressions that would be in an ordinary cohesive filling, for a filling of this kind will never pit. It would be a novelty to use the rubber-dam to hold water around a tooth instead of keeping it dry, but this would not be necessary.

It is not always best to follow the bell-wether, but think, think for yourselves. Think about that which you are trying to do, whether you are pressing out air or water; make a solid foundation, and as you come near the surface, use smaller, thinner pieces of gold, even down to single strips of No. 4 foil; make the same condensation with less force, so as not to disturb the body of the filling, and try to bring the gold into juxtaposition.

Discussion. Dr. J. M. Porter: Dr. Davis has proved to-night that gold can be so welded under water that it will not pit nor scale, as I failed to pull off the last piece in the filling just finished, which was purposely lapped over the enamel edge.

Dr. Wm. Smedley: A coin may pass current for years yet prove spurious at last, and an idea the same. The cherished theory, that water will interfere with the cohesion of gold foil, has become so fixed in our minds that no mere assertion could disturb it; but to-night's ocular demonstration leaves little ground for doubting Dr. Davis' position. However, I should like further proof.

Dr. W. T. Chambers: The way Dr. Davis filled the cavity, and the fact that considerable gold overlapped the edges of the cavity,

which some endeavored to remove and could not, would indicate that the gold actually cohered. It was my impression, the cavity being a simple one with walls all around, that the filling was inserted the same as soft gold would be placed in such a cavity—by the wedging process. The lateral incisor containing a contour shows the gold properly condensed and apparently as perfect as a filling could be made of cohesive gold under any circumstances. I do not doubt but that the Doctor has accomplished just what he claims. However, we have viscid saliva to contend with in the mouth and not pure clean water, therefore I cannot see where the method has any practical application. In using cohesive gold I want it as cohesive as possible, and in order to have it so, we are told by good authority, the surface must be pure. Gold is not the only metal possessing cohesive properties. For instance, lead, zinc or tin, when freshly cut and before oxidation of surfaces occurs, will cohere, but if exposed to the atmosphere long enough they will not. If wet they will not. Most of us have found from experience that gold in order to cohere must possess absolutely pure, clean surfaces. The filling of these cavities with tooth and gold in water, especially the contour in lateral, is a surprise, and until I try it I shall have to attribute the Doctor's success to his manipulative ability.

Dr. E. R. Warner: In contour fillings this operation apparently presents greater obstacles than under dry conditions, and the presence of water must obstruct vision through refraction. Furthermore, the need of using thin pieces of gold, and the absolute union of layers by obliteration of water, necessitates unceasing care. I believe, however, that this method could largely serve our purpose in buccal and labial cavities partially beneath the gum. The frequent flushing of the cavity and gold with water would prevent interference of saliva, which contains organic and inorganic particles so destructive to the adaptation of gold. The theories advanced by Dr. Davis seem reasonably tenable. The scientific principles underlying the welding or cohesion of gold and other metals are apt to be overlooked by the ordinary observer, as he is inclined to recognize cohesion as an established fact and allow the theory of molecular arrangement to pass by unnoticed.

Dr. P. T. Smith: Half the latent possibilities of gold are unknown to the average dentist, and I would urge more clinical laboratory work. Years ago when the instantaneous impact principle

of the mallet was introduced to the profession, and the rubber-dam was discovered, quite a journalistic controversy arose regarding the safety or reliability of submarine gold fillings, and their durability when put in by careful manipulators was incontrovertibly set forth.

My own laboratory experiments were made mostly with No. 4 non-cohesive gold foil, and it was proved that better results could be obtained under warm than cold saliva, better under pure cold water, and still better if the pure water was warm or quite hot. The fluids seemed to serve as a vehicle to lead the ever-present and deleterious air from between the folds of gold. Oils of various kinds, either hot or cold, were found to be an effectual bar to cohesion. Water artificially mineralized was deleterious according to its contents. In the presence of warm saliva actual cohesion could be effected by using well-serrated small-pointed instruments. The well-defined serrations produced the effective inclined-plane pressure, more fully overcoming all interposing foreign substances. Soapstone dust in water was the most deleterious of any mineral admixture. Chloroform, ether, alcohol and saline water took precedence over ordinary foreign matter in the order named.

More gold is likely to be introduced into a cavity while saturated with moisture than if recently annealed and dry, because of the persistent tendency to honeycomb even under the influence of the lightning impact. It is not well to recommend the indiscriminate presence of moisture in gold for fillings, but in rare instances a good homogeneous gold filling can be made under water.

FATAL BLOOD-POISONING AFTER EXTRACTION.

REPORTED BY M. C. SMITH, D.D.S., LYNN, MASS., BEFORE THE MASSACHUSETTS DENTAL SOCIETY, AT BOSTON, JUNE 1 AND 2, 1898.

April 18, 1898, I was called to the hospital to see a patient, and found Mr. B. F., a gentleman about the age of 55 or 60. Some nine days previous he had some soreness in the face and went to a dentist who advertised to extract teeth without pain for a fee of fifteen cents, and had a right lower third molar extracted. A day or two after he trimmed off the ragged pieces of gum with a pair of scissors, and since then had been growing rapidly worse. I found the face terribly swollen, right eye closed, a hole sloughed through the skin as big as the top of a tumbler, from over the outer angle of the jaw forward. I could pass a probe upward to the malar and downward

half way to the clavicle. They had nearly a yard of three inch wide gauze packed in the cavity, which latter was discharging a dark, foul pus in large quantities, the odor of which was terrible. The nurse was kept on duty only half a day, and in fact there was only one nurse who could assist in doing the dressings. Inside the mouth I think the tooth was all out. There was a hole through the soft palate as large as a lead-pencil, and I could pass a probe through into the pharynx, but could not find any connection between the lesion in the soft palate and the lesion in the cheek.

They were applying hot fomentations of a solution of sulphonaphthol, and irrigating with a solution of H_2O_2 , under which treatment the temperature had been reduced from 102 to 100. I continued the sulpho-naphthol and H_2O_2 , cauterized the ulcer in the mouth with a saturated solution of nitrate of silver, and put him on iodid of potassium, 5 grains three times a day, to be increased 5 grains each day, and face to be dressed three times a day.

April 19 he looked bad, the tissue was all sloughing away except the ligaments and vessels, and I was afraid of a hemorrhage at any time. April 22, I removed a quantity of slough from under the parotid gland, which made a free opening into the mouth. This gland was free, except the posterior attachment and duct. The irrigator could be passed freely into the mouth, upward on a level with the superior orbital ridge, and along the full length of the inferior orbital ridge the malar could be easily traced, also the inferior maxilla from the sigmoid notch to the mental foramen. I feared septic pneumonia. The diagnosis was not clear, and the hospital staff were rather inclined to think it was anthrax; someone suggested actinomycosis. After a thorough examination we could get no history of syphilis, so discontinued the iodid of potassium, and put him on sulphate of quinin until he received the constitutional effect, then changed to hydrochlorate of quinin and urea, which was gradually pushed up to three grains every two hours. April 30, acted very septic. May 5, looked septic, and was going to pieces rapidly. May 6, temperature dropped to normal, patient looked better, face was granulating in rapidly, very little pus, but eyes looked bad and were full of pus.

From then until May 19, when he died, the patient was in a very septic condition, and we had little hope. His internal treatment, besides those drugs already mentioned, was tincture nux vomica,

sulphate of strychnin, when needed, and plenty of stimulants. The pathologist reported no signs of anthrax or actinomycosis; all he could find was a mixed infection of streptococcus and staphylococcus. Now, was that sufficient to produce such a violent onset of disease, and was death due to a general sepsis, a metastatic abscess of some of the internal organs, a septic pericarditis, or what was the immediate cause?

THE PERFECT MATRIX.

BY W. O. FELLMAN, D.D.S., OAK PARK, ILL.

Of late there has been much written about the various kinds of matrices and the use of same. In my judgment however, all of them have their faults, so I would like to describe one which gives me great satisfaction, and refer to its use in filling the proximal surfaces of the molars and bicuspid with amalgam.

Why matrix should be used. First, I believe no cavity can be perfectly filled with amalgam unless it has four walls, and if one of these be missing it must be restored with a matrix. About 99 per cent of the approximal cavities in molars and bicuspid when prepared properly (according to Dr. Black's preparation of cavities in molars and bicuspid) will require the use of a matrix when filling with amalgam. Second, Restoration of tooth and also of the proximal space is gained. Third, If the cavity has a missing wall the amalgam must be smeared into the cavity, but if the missing wall be restored by matrix, the amalgam can be packed into the cavity, and you may feel sure it is pressed up tight against the margins of the cavity, which is impossible when it is smeared into the cavity without the use of matrix. Fourth, An amalgam filling is much stronger when crystallized than one which is packed loosely. Fifth, When the matrix is properly used there is little finishing to be done on the proximal surface.

How the matrix is made. The only thing needed is a thin piece of sheet steel, a little wider than the tooth, and as long as the distance from cervical margin to occluding surface.

How applied. After a cavity is perfectly prepared, slip the piece of steel between the teeth, bend it somewhat to the shape of the tooth, then apply Perry separator, and while tightening separator see that the steel matrix is between the one pair of bars and the tooth to be filled, and also that the matrix covers the cervical

border of the cavity, then tighten the separator, which will hold the matrix tight, and get a little more space than the extra thickness of the matrix, so that when the amalgam is polished the approximal space will be restored, and not only the shape of the tooth. Next bend the matrix against the opposite tooth at the point of the proximal contact with a burnisher. If space still exists between the cervical edge and matrix, push the point of a toothpick into the approximate space which will crowd the matrix tight against the cervical border. Tighten top part of matrix, if loose, by tying a ligature around tooth at matrix. To prevent ligature from slipping down toward gum, make a notch in edge of steel on the lingual and buccal edges. Now if every step has been carried out properly you have a matrix which is quickly applied, and perfect in every detail. Then pack in your amalgam with strong pressure, using Fellowship alloy, and let it harden, which occurs quickly.

Removal of the matrix. When the amalgam has sufficiently hardened remove separator and ligature; second, bend the lingual and buccal parts of the matrix out flat and straight; third, reapply separator by letting the matrix slip between the two sets of bars of the separator; tighten separator slightly and lift out the matrix. Generally the matrix can be removed without reapplying the separator, by gently wriggling the matrix from between the teeth, provided the amalgam has hardened and the matrix is flat.

ON KEEPING THE TEETH CLEAN.

BY A. W. BEACH, D.D.S., SHELDON, IOWA.

Members of the dental profession do not all agree on the subject of cleansing the teeth and the oral cavity. There is no objection advanced by any dentists to everyone keeping his or her mouth and teeth scrupulously clean, but the methods employed to that end have ever been the cause of much debate and discussion, both through the journals and by society papers and discussions.

As with all subjects under debate, the majority of the profession adopt a middle-of-the-road position and avoid so far as possible both extremes. There are, however, those radical ones at both sides of the path, to whom all proceedings except the strictest adherence to the rules and regulations laid down by themselves are wrong.

It is not my intention to take any new or startling position on the subject in hand, but rather to counteract so far as possible some of

the evil effects of statements made some months ago in *The Dental Review* by its worthy editor, Dr. A. W. Harlan. In the article referred to Dr. Harlan vigorously attacks the use of tooth-washes, pastes, powders, and antiseptic mouth-washes, and refers to the tooth-brush as "one of the abominations of civilization."

After carefully reading each of the two editorials, and also his paper entitled "The Drug Habit," I have arrived at the conclusion that there are a great many inconsistencies in them.

In one place the Doctor denounces mouth-washes, and in another he recommends a weak solution of alcohol, peppermint, or extract of white-oak bark in water. Then he denounces tooth-brushes, powders and pastes, and in lieu of these recommends using the corner of a towel, moistened and dipped in a little calcined magnesia or prepared chalk, and a brisk rubbing of the teeth and gums for five minutes twice a day. He of course recognizes that there may be abnormal and surgical cases which will demand the exhibition of a buccal sterilizer and antiseptic, but his attack is directed against the habitual use of "drugs" in the mouth.

We must all admit that bad results may arise from an indiscriminate use of medicinal agents, that all such should be carefully prescribed and that strict directions should accompany each prescription; still I feel that Dr. Harlan has been overzealous in his attacks, and that there is a middle course which is safer and better for all than his extreme ideas.

There is no doubt but that almost all of the antiseptic washes before the profession at the present time have an acid reaction, turning blue litmus to a bright pink in a very few seconds. They owe a great share of their germicidal properties to the presence of boric and benzoic acid. But if the preparation be prescribed in the proportion of one part antiseptic to three or four parts water, and if the patient be directed to rinse the mouth thoroughly with plenty of clear water after using the antiseptic, as a person will use soap to cleanse the hands, and then rinse the hands in water to remove the soap and debris, there will be no danger of causing erosion of the teeth. The truth of Dr. Harlan's statement, that there may be danger of causing erosion of the teeth by using the slightly acid mouth-washes, will be doubted by many. A number of the most advanced investigators into the cause of erosion, Dr. Black being one of these, have concluded that erosion is not due to acidity of the

buccal secretions. The proof of this is the fact that definitely outlined areas of specially selected teeth are acted upon, this area spreading slowly and retaining its original shape; whereas if erosion were due to a buccal acidity, all portions of all the teeth would be attacked simultaneously and in a like manner. Also, that erosion has been known to exist and progress in a mouth having an habitual neutral or alkaline reaction. The theory that erosion is due to follicles, nodules or cells on the internal surface of the lips or cheeks, these acting similar to the manner of the giant cells which break down and absorb the deciduous teeth, has been advanced by a number of recent investigators and is attracting considerable attention.

I feel that there are very few people who would not be benefited by the use of an antiseptic mouth-wash, used each evening just before retiring, so direct my patients to use the preparation I prescribe and give them explicit directions how to proceed: Brush the teeth carefully, using the mouth-wash; then brush with warm water, to clean out the disorganized debris; after which the mouth should be rinsed thoroughly with large mouthfuls of water washed around freely in the cheeks and between the teeth.

As for tooth-powders being any worse for the presence of a little sugar and one or more of the essential oils, this may be a fact, but I fail to see any logic in the conclusion. Most of the tooth-powders have for their base powdered chalk, or calcined magnesia, as recommended by Dr. Harlan. I for one feel sure that the addition of a sufficient amount of powdered sugar to make it palatable, and enough of any of the essential oils to impart to the powder antiseptic properties, cannot help but enhance the value of the preparation. Each dentist should have some antiseptic wash of which he knows the ingredients and the antiseptic properties, also some reliable tooth-powder which he knows to contain no ingredients which are liable to cause injury to the gums or teeth—the mouth-wash to be used each evening and the tooth-powder to be used whenever the teeth show the need of a polishing. The tooth-brush and luke-warm water may be used to advantage after each meal.

How a thinking man, and one who is entitled to sign himself M.D., D.D.S., can refer to the tooth-brush as "one of the abominations of civilization" passes my limited comprehension. True, a poor quality of bristle may break off, causing slivers to penetrate the gums and set up trouble, or the brush may be stiff enough to

injure tender gums and mucous membrane if it be used carelessly or ignorantly, but even in these cases the brush would do more good than harm. If the brush be of proper shape and size, and be made of soft or medium texture bristles, there is no possible danger of any one using it sufficiently to abrade or wear out the teeth; and when used carefully and intelligently the gums are safe from injury.

Dr. Harlan calls our attention to the fact that in ancient times our forefathers didn't know the use of antiseptics or tooth-picks, floss-silk or tooth-brushes; that they ate less soft cooked food and knew nothing of such a person as a dentist; that they were happy then. I might add that they had no houses or clothing, and that the aborigines did not wash themselves, but greased and painted their bodies instead. The Doctor admits that in ancient times they lost their teeth by caries, abrasion, erosion, and other diseases and accidents. Now we wash and clothe ourselves, live in warm houses, eat cooked food and prepared confections, and do not work or exercise so violently—how much more need do we have for the maligned picks and powders, floss and washes, pastes and brushes.

Now with all these prophylactic measures we still have some decay and loss of tooth structure. It is appalling to think what a terrible destruction of teeth there might be were it not for all, or at least a majority of the aforementioned necessities. Because a few isolated cases among a practitioner's patients seem to be immune from decay, in spite of the fact that they use the corner of a towel instead of a tooth-brush, and alcohol for a mouth-wash, although it is known to be valueless as an antiseptic, this is no reason why we should denounce the brush and all antiseptics of known value as abominations except in surgical cases.

ANALYSES AND RESULTS OF EXPERIMENTS WITH VARIOUS SOLUTIONS USED AS MOUTH-WASHES, DENTIFRICES, ETC.

BY A. H. PECK, D.D.S., M.D., CHICAGO.

I have not as yet taken the time to carry all these agents to their limit as antiseptics, but have experimented with them sufficiently to determine which ones are most potent as such. I have also, in conjunction with Professor Hall, tested and analyzed them to determine whether they are acid in reaction, alkaline or neutral. Also

to determine whether any of them contain mineral acids, or anything else of like nature that would render them harmful to the delicate structures of the oral mucous membrane.

In the tests to determine their relative potency as antiseptics, I began by using five drops each of these agents in the culture tube, which latter contained 10 c. c. of bouillon. As they failed to prevent the development of bacteria, each was gradually increased in amount until 20 drops were reached. Of sanitol this quantity, 20 drops, proved successful; no development of germs occurred in the tube. That the above result might be verified, a number of subsequent plants were made, in which I used a similar amount, and in no one of these did growth occur. As there are 76 drops of sanitol in 1 c. c., this agent is antiseptic in 1 to 38 parts. By the analysis, from a chemical standpoint sanitol is shown to be neutral in reaction, and to contain no mineral acids or other ingredients that might prove harmful to the soft tissues. I have had an application of this agent confined to the soft parts for thirty-six hours (as I have had all the others in this group), and found its therapeutic action to be that of a mild stimulant.

During the past year I have especially observed the results locally of a thorough, systematic use of this agent in the treatment of pyorrhea alveolaris, so-called. These results are very gratifying. Its antiseptic properties in conjunction with its slightly stimulating effects have clearly shown it to be an efficient agent in this connection.

Next in potency as an antiseptic is borolyptol. In the culture tube, in which 20 drops of this agent were used, just the slightest amount of development of bacteria was observed. At least a dozen subsequent tests of this agent were made with no variation from the above result. The chemical analysis of borolyptol showed it to be acid in reaction, containing no mineral acids, however. Its contact with soft tissue for thirty-six hours showed it to be in this respect therapeutically a neutral agent; no evidence of stimulation being produced.

Twenty drops of pasteurin restrained the development of bacteria in the culture tube, but not to the extent that borolyptol did. Pasteurin is acid in reaction, and the chemical analysis showed it to contain a trace of sulphuric acid. It is non-stimulating to soft tissue.

Twenty drops of Wampole's solution restrained the development of bacteria in the "unit of culture media" to about the same extent as pasteurin did. I have misplaced the chemical analysis of this agent, and at the present am unable to find it. It is non-stimulating to soft tissue.

Twenty drops of glycothmolin failed to restrain the development of bacteria in the culture tube to any appreciable extent. This agent is strongly alkalin in reaction, and contains no mineral acids. It is non-stimulating to soft tissue.

There was full development of bacteria in the "unit of culture media" from the use of twenty drops each of zymocide, which is strongly acid in reaction, but which contains no mineral acids; of benzolyptus, which is slightly alkalin in reaction, and contains no mineral acids; of euthymol, which is slightly acid in reaction, and contains no mineral acids; of listerin, which is strongly acid in reaction and contains no mineral acids.

Fifty gts. of sozodont produce no perceptible restraining effect on the development of bacteria in the "unit of culture media." It is alkalin in reaction.

According to the therapeutic action of the essential oils, and other agents, the use of which is closely allied with them, on soft tissue, they are grouped into three classes, viz., 1, Stimulating; 2, Sedative; 3, Neutral.

1. STIMULATING AGENTS.

Cassia.....	is antiseptic in 1 to 2233 parts.
Cinnamon (Ceylon).....	" 1 to 2100 "
Cinnamon (Synthetic).....	" 1 to 2138 "
Myrtol.....	" 1 to 357 "

2. SEDATIVE AGENTS.

Cloves.....	" 1 to 1150 "
Creosote (Beechwood).....	" 1 to 1280 "
Campho-phenique.....	" 1 to 473 "

3. NEUTRAL AGENTS.

Bay.....	" 1 to 1028 "
Sassafras.....	" 1 to 1000 "
Peppermint.....	" 1 to 875 "
I. II. III.....	" 1 to 454 "
Cajuput.....	" 1 to 120 "
Eucalyptol.....	" 1 to 116 "
Formalin.....	" 1 to 1400 "
Carbolic Acid.....	" 1 to 338 "

Gaultheria.....	saturated solution in the broth—Growth.
Eugenol.....	“ “ “ “ “
Iodoform.....	“ “ “ “ “
Nosophen.....	“ “ “ “ “
Aristol.....	“ “ “ “ “
Bichlorid Mercury (1 to 1000) sol.....	is antiseptic in 1 to 36 parts.
Formaldehyd (1 to 1000) sol.....	“ 1 to 8 “
Alcohol (Commercial).....	“ 1 to 9 “
Peroxid Hydrogen (Marchands).....	“ 1 to 58 “
Hydrozone.....	“ 1 to 58 “
Pyrozone (3%).....	“ 1 to 58 “

For want of time I was unable to carry all the following solutions to the limit as antiseptics. It was found that 20 gtt. of sanitol prevented development of bacteria in the “unit of culture media,” so 20 gtt. each of the following solutions were used with the varying results appended, with the exception of sozodont, which was experimented with as high as 50 gtt.

Sanitol.....	is antiseptic in 1 to 38 parts.
Borolyptol.....	20 gtt. Restraint—decided
Pasteurin.....	20 gtt. Restraint
Wampoles.....	20 gtt. “
Glycothymolin.....	20 gtt. Growth.
Zymocide.....	20 gtt. “
Benzolyptus.....	20 gtt. “
Borominthol.....	20 gtt. “
Listerin.....	20 gtt. “
Euthymol.....	20 gtt. “
Sozodont.....	50 gtt. “

WISEACRE.—A decayed wisdom tooth.

DISEASES OF THE EYE AND EAR AND THEIR RELATION TO DISEASES OF THE TEETH.—Pont (*Berliner Klinische Wochenschrift*, 1898) says that though known to science for many years, this connection has only latterly been thoroughly investigated. It is not alone diseases of the teeth, such as periostitis, pulpitis, and caries simplex, which occasion derangement of the eye or ear organs, but also operations upon the teeth, such as extraction, etc. Derangements of the eye most common are conjunctivitis, keratitis, dacryocystitis, blepharospasm, and even blindness has been reported. The ear diseases are as follows: Pains in the ears, tinnitus, aurium, hyperacusis and deafness. All these derangements are wont to disappear simultaneously with the relative affections of the teeth, or upon the extraction of the latter. Children are troubled with the above-mentioned maladies upon the appearance of their first teeth. Increase of temperature is occasionally produced, which when conjunctivitis exists suggests measles. Secondary derangements of the ear are found in adults upon the appearance of their third molars.

Digests.

SIGNIFICANCE OF THE COATED TONGUE. By W. H. Weaver, M.D., Chicago. It is said by physicians that the character of the coating on the tongue indicates the condition of the stomach or the presence of certain systemic irregularities. If it is a thick, white, grayish or brownish fur, the stomach is foul. Yet a clean tongue is compatible with a very severe form of gastric disturbance. "There is no satisfactory explanation given for the presence, absence or ever-changing appearance of this coating.

It is composed of granular matter, mucus, epithelial cells, phosphates, detached secondary papillæ and microorganisms. Most of the epithelium is derived from the surface of the tongue by exfoliation, some from the saliva, some—the earthy salts and organic matter—from the food. A very small portion, however, is derived from the food, as the tongue is usually cleaner after a meal than before. The greater amount of deposit will be found in the morning, as the tongue has been quiet during sleep. There is one organ, however, which has not been entirely quiet, and that is the salivary secreting apparatus. More or less of this secretion has been thrown into the mouth and swallowed unconsciously. In its passage through the mouth it has deposited a large amount of organic matter and phosphates on the teeth and upper surface of the tongue. This we call the "salivary precipitate." It is a matter of great importance to know why this salivary precipitate forms on one tongue and not on another, or why changing systemic conditions influence its character. That it does indicate to some extent the condition of the stomach may be admitted, with the reservation that there is no direct connection between the two.

This "salivary precipitate," being derived from the blood through the salivary glands, varies in quantity and character with the condition of the blood. When the blood is loaded with impurities the coating is thick. In almost all acute and chronic inflammatory conditions it is present, and indicates to some extent the character and quantity of the toxemia. In jaundice, liver diseases and diseases of the stomach and bowels, its coat varies from a brown to a thin white fur, as a result of the presence in the blood of the products of improperly digested food or of bile and other toxic elements

absorbed from the sluggish intestines. In diseases of the kidneys the coating is usually very thick and offensive. In rheumatic conditions, and indeed in every condition of disordered nutrition, which includes the presence in the blood of large quantities of waste matter, impurities or toxins, the salivary precipitate will be of proportionate thickness.

Considered in this light, the coating on the tongue becomes a reliable index to the immediate condition of purity or impurity of the blood, and accordingly to the activity or inactivity of the skin, kidneys, bowels or the emunctories in general; also to the manner in which the stomach is doing its work, or is being overworked by improper food and drink.

If the healthy equation of food digestion and assimilation is disturbed, then the excess must be thrown out from the blood through the different organs of excretion and secretion. Consequently organs which are not excretory in health become such when the blood is so impure that every secretion derived from it must carry out with it a certain amount of sewage.

In cancer of the stomach, and in disease of the *primæ viæ* and a few other conditions, the deposit is not retained on the tongue.

The prevalent idea that this coating is firm and must not be cleaned off, and is harmless, is entirely erroneous. It is really astonishing how long this breeding-ground for all manner of germs of fermentation and disease has remained unnoticed and untouched in this period of antiseptic philosophy. The cleaning of the tongue should be recommended and practiced as an hygienic procedure. No doubt there is a constant stream of germs of all sorts carried down into the stomach from the foul coating of the tongue, infecting the alimentary canal as well as the blood. The germs of the whole category of local and general inflammatory diseases, acute and chronic, are among them; tuberculosis, diphtheria, scarlet fever, measles, small-pox, etc. Canker and other diseased conditions of the tongue and mouth can be easily cured by the same attention to cleanliness of the organ. In certain systemic diseases where the tongue becomes very foul, there would probably be less sepsis if the tongue were cleaned frequently.

The odor of a strong breath is much the same wherever it occurs, and is not greatly influenced by the character of the diet, with the exception of certain articles. The thicker the coating the stronger

the odor. Certainly there are well known causes of bad breath. The most common one in comparatively healthy individuals, is the decomposition of this coating on the tongue, or salivary precipitate, and is not derived directly from the stomach, as is generally believed. This can be easily proven by simply thoroughly scraping all loose coating from the tongue and disinfecting the surface, when the odor will be entirely removed, presuming that the teeth have also been cleaned. The odor of onions and tobacco may be removed or greatly reduced in the same manner, as it penetrates the coating very easily and so may be very persistent.

I have never failed to recommend the procedure of scraping the tongue whenever consulted regarding an offensive breath. Some patients will have so thick a coating that it will be pushed off with the smooth edge of a tongue depressor, and the breath will be almost as thick. In these cases the very best results will be obtained by the daily cleaning of the tongue. Very little of the coating remains after a thorough scraping, and that may be easily disinfected. The salivary precipitate will reappear during the night and must be removed the next morning. In mouth-breathers it is pronounced and offensive.—*Alkaloidal Clinic, April, 1899.*

* * *

CHLOROFORM OR ETHYL BROMID. A table of experiments by von Ziemacki. 1. Chloroform acts on the intelligence, which becomes troubled; sensation of touch and pain remain unaltered. Ethyl bromid first acts on the sensation of pain; analgesia complete first of all; leaves the intelligence almost intact. 2. Chloroform causes strong excitation of the central nervous system. Ethyl bromid causes no wandering of the mind, no excitation of the central nervous system. 3. Following the chloroformic sleep is the relaxation of the muscles. Following the ethyl bromid, a slight tonic reaction of the muscles. 4. Under chloroform then commence, successively, the weakening alteration and loss of consciousness. Under ethyl bromid, after the analgesia the consciousness is lost. 5. Chloroform acts last of all on the sense of pain. Ethyl bromid acts last on the intelligence. 6. Chloroform does not stimulate the respiration during narcosis. Ethyl bromid stimulates respiration during narcosis. 7. Chloroform never causes any clonic contraction. Ethyl bromid sometimes produces clonic contraction during the narcosis. 8. Chloroform causes nausea and vomiting

almost invariably after narcosis. Ethyl bromid is rarely followed by sickness or vomiting. 9. Recovery from chloroform depression and return to consciousness are as slow to appear as is the anesthesia slow to induce. The anesthesia and its recovery are both rapid when induced by ethyl bromid.

* * *

DENTISTS AS PRESCRIPTION - WRITERS. By G. B. Squires, Ph.G., D.D.S., Somerville, Mass. Do our dental colleges instruct sufficiently in the art of prescription-writing? How many graduates of the colleges in this country are capable of correctly writing a compound prescription from the heading to the signature? Probably the per cent is very small, yet the ability to do so should be considered by our colleges one of the essentials of a dental education. The ordinary dentist seems to have but a vague knowledge of the terminology of the ingredients in his prescription, therefore he resorts to abbreviations. Probably over ninety per cent of the dentists use abbreviations in the body of their prescriptions. But it is not in the terminology of the ingredients of his prescription only that the average dentist is lacking knowledge, but in many cases it is wrong or open to criticism in other respects, as will be shown by reproducing prescriptions written by dentists and brought to drug-stores for compounding.

Dentists are writing more prescriptions as their profession advances; often they are for internal use and more or less complicated. They argue, and justly so, that they have a perfect right to prescribe internally, the same as their medical brethren, providing they consider such treatment essential for the alleviation of pathological conditions in their branch of medical science. Therefore they should understand how to intelligently write a proper prescription, as well as the nature, both physical and chemical, of the drugs they are prescribing.

It is true that the physician in many cases is not capable of writing a correct prescription, not only as to terminology, but in other respects, as a copy of a prescription written by a medical graduate of six months' practice, as follows, will show:

R.—Cocain muriat., gr. x;

Aq. ʒii. M

Sig.—As directed.

N. B.—Do not use the hydrochlorate. Dr. —

But on the whole the physician is far ahead of the dentist.

Proper terminology may seem a small matter to some, and they may argue that it makes no difference whether the ingredients of their prescriptions are written grammatically and in full or not, so long as the druggist is able to make them out and put up what the dentist intended. But why should not a dentist be able to write the Latin title of a drug or preparation of the Pharmacopœia as well as the Latin names that occur in the study of anatomy and physiology for example? A failure to do so in either case shows a deficiency in elementary education, an essential to any professional man. Besides, a prescription written in a slipshod manner may be the cause of direct detriment to the author in more than one way. To illustrate: A druggist may have on file prescriptions written by two dentists, both in his locality; number one has written something like this:

R—Hydrargyri chloridi mitis, gr. iii;
Sodii bicarbonatis, ʒss;
Sacchari, q. s.
M. et. Div. in chart. No. xii.

Sig.—One every hour till result. Dr. —

And number two thus:

R—Hyd. chlor. mit., grs. iii;
Sod. bicarb. ʒss;
Sugar, q. s.
M.—Make 12 pos.

S.—As directed. Dr. —

A person may call at his store and inquire for a dentist (not an uncommon occurrence). The druggist does not know either dentist by reputation, but he refers the would-be patient to dentist number one, feeling sure that the dentist who was capable and painstaking enough to write an elegant and proper prescription would be capable and painstaking in the other branches of his profession. Again, a physician may be called to see a patient, and in getting the history of the case he finds that the patient is already taking medicine prescribed by the dentist for some dental trouble. He naturally wants to know what the medicine is, so that he can prescribe intelligently, and know that what he gives will not be counteracted or augmented by what the patient is already taking. He asks to see the prescription. If the patient hasn't it, he takes the number and goes to the drug store. Thus the prescription is read and mentally criticised

by another educated man. Furthermore, an abbreviated prescription may be the cause of a mistake in the compounding, which in turn may be fatal to the patient, as will be shown further on, and this is the most important reason why a dentist or any other prescription-writer should write the same out in full. The patient's welfare should be safeguarded in every possible way, and if the writer does his part the chances of a mistake by the druggist are reduced to a minimum; for in all first-class drug stores—and there is where all prescriptions should be sent—no prescription is ever compounded and delivered to the patient until it has been reviewed by two men; the one compounding handing the prescription to the other, to be compared or checked off by him.

Many dentists seem to think that one must have a thorough knowledge of Latin in order to write a prescription with the proper endings. This is not so. A very limited knowledge and the remembering of a few rules is all that is necessary to write a proper prescription. Of course one must be familiar with the Latin titles and orthography of drugs and their preparations as they appear in the *materia medica* and *United States Pharmacopœia*, and I think most dental graduates are. If not, they should get a *United States Pharmacopœia* or *Dispensatory* and become familiar with them without delay.

If the dentist will acquaint himself with merely two Latin cases—the nominative and the genitive—and be able to change the nominative endings of the nouns and adjectives of the *Pharmacopœia* into the genitive endings—the case in which they should be in the prescription—he will be able to write ninety per cent of his prescriptions correctly instead of ninety per cent incorrectly, as they appear at the present time.

There are certain abbreviations allowable in prescription-writing, as *M.* for *Misce*, *Sig.* for *Signa*, *Chart.* for *Chartula*, etc., just the same as there are certain abbreviations allowable in letter-writing; but the body of the prescription should not be abbreviated, and when it is it shows one of two things, carelessness or ignorance.

The Latin nominative case corresponds to our English nominative, and the genitive to the English objective with "of." Of course in the English when we change a noun from the nominative to the objective case it is still spelled the same, but in Latin in most cases the noun is spelled differently—that is, the noun has a different end-

ing. No doubt this will appear decidedly elementary to those who are familiar with the Latin language, but it must be remembered that this is written for those who have practically no knowledge of Latin, and who know that drugs and preparations when written in a prescription have a certain ending, but do not know why they have this ending or how to write it.

There are five declensions or methods of forming the cases in Latin, but there are no pharmacopœial words of the fifth, and only three of the fourth; therefore we have practically but three declensions with which to become familiar.

First Declension.—All pharmacopœial nouns and adjectives ending in *a* (excepting *aspidosperma*, *physostigma* and *theobroma*) are of the first declension, and are placed in the genitive by changing the termination *a* to *æ*—*e.g.*, *gentiana*, the pharmacopœial title for gentian, and in the nominative case, in a prescription would be *gentianæ*. Of the 994 articles of the Pharmacopœia about 126 are of the first declension. Now any dentist who is at all familiar with the titles of the Pharmacopœia or his *materia medica* can recall many of the drugs and preparations he uses and writes for that end in *a*—*e.g.*, *aqua*, *tinctura*, *ammonia*, *caffeina*, *morphina*, *quinina*, etc., and when he writes for those articles he has merely to change the *a* to *æ*, and a properly written prescription results.

There are two pharmacopœial nouns of the first declension that end in *e*—*aloe* and *mastiche*—and their genitive is formed by changing the *e* to *es*—*e.g.*, *aloes*. These, with the three noted above, are the exceptions to this rule. Most of the other rules have exceptions. These should be remembered if possible, but not at the expense of the rules. If one should forget the exceptions and write *theobroma theobromatæ*, it would not show so much ignorance as it would to write *theobrom*.

Below is an example of a prescription whose ingredients are all of the first declension:

℞—*Tincturæ calendulæ*, ℥ii;
Tincturæ cinchonæ compositæ, ℥ii;
Aquæ menthæ piperitæ, ℥iv. M.

Sig.—Mix with equal parts of water and use as a mouth-wash,

Now let us examine this in detail. First, we have in the upper left-hand corner of our blank the sign ℞, and if it is not already there, it should be put there. The ℞ stands for the imperative

singular of the Latin verb *recipio* (I take), which is *recipe* (take thou). The mark drawn across the quirk of the R thus: \mathbb{R} , is part of the sign of Jupiter; this sign representing the prayer to Jove, used by the ancient physicians before beginning their prescription. This has no significance now, but is curiously retained and illustrates the tenacity of custom. Then translated, \mathbb{R} says to the druggist, "Take thou;" the subject "thou" being superfluous, it is contracted to "take." Next is the quantity. The arbitrary sign \mathfrak{z} has been adopted to represent an ounce, and the Roman numerals for the numbers. This is the customary and proper way to write the quantities. It is also proper to write the quantities in Latin, as shown below, but this involves another Latin case (the accusative), and is optional with the writer. Then translated we have "Take two ounces." Next comes the drug or preparation which we want, and in English would read thus: "Take two ounces of tincture of calendula." "Tincture" and "calendula" are in the objective case, and the Latin genitive being a counterpart of the English objective with "of," would be the case in which they belong in the prescription; so we change calendula to calendulæ and tinctura to tincturæ. In the pharmacopœial title "tincture calendulæ," it will be observed that calendula is already in the genitive case, for this title signifies a preparation *of* calendula, namely, "tincture *of* calendula," calendula being already in the English objective or the Latin genitive case. Of course the pharmacopœial title of the drug, calendula, is in the nominative case and written thus: "Calendula." In writing the second and third ingredients we proceed in exactly the same way, with the exception in the second of using the arbitrary sign \mathfrak{z} to represent drams.

When quantities are written in Latin prescription appears thus:

\mathbb{R} —Tincturæ calendulæ, uncias duas;
Tincturæ cinchonæ compositæ, drachmas duas;
Aquæ menthæ piperitæ, uncias quatuor. Misce.

Signa.—Dilute with equal parts of water and use as a mouth wash.

Directions are very seldom written in Latin in this country, and should not be unless it is desired that the druggist shall write it on the label, for, strictly speaking, the druggist should copy what follows "Signa" *literatim*; and this is done sometimes with German doctors who write their directions in German and expect the druggist to write on the label the same, as it is the only language which

their patients can read. Some prescription-writers place "f" before the ounce or dram sign, thus: (f℥) when they write for liquid preparations; but this is not necessary, as the druggist always uses wine measure for liquids and troy weight for solids, unless specified otherwise by the writer.

Second Declension. All pharmacopœial nouns and adjectives ending in *us* (excepting *Rhus* and the three nouns of the fourth declension which follow), and all pharmacopœial nouns and adjectives ending in *um* are of the second declension, and are placed in the genitive by changing the termination *us* and *um* respectively to *i*.—*e.g.*, *eucalyptus*, *eucalypti*, *acidum*, *acidi*. About 300 titles of the Pharmacopœia are of the second declension. A few familiar to dentists are, *aconitum*, *argentum*, *arsenosum*, *chloroformum*, *dilutum*, *humulus*, *ricinus*, and *syrupus*.

Example of a prescription containing ingredients of the second declension:

R—Acidi arsenosi, gr. i;
Ferri reducti, ℥i;
Extracti taraxaci, q. s.
M. et in pil. xxx div.

Sig.—One after each meal.

There are three pharmacopœial nouns of the second declension which end in *on*, viz, *eriodictyon*, *hæmatoxylon*, and *toxicodendron*, and their genitive is formed the same, that is, by changing the termination *on* to *i*—*e.g.*, *hæmatoxyli*.

Third Declension. All declinable pharmacopœial nouns and adjectives having other nominative endings than *a*, *us*, and *um* are (with five exceptions) of the third declension. The exceptions are those already mentioned, namely, *aloe* and *mastiche* of the first, and *eriodictyon*, *hæmatoxylon* and *toxicodendron* of the second declension. This is the most difficult declension that we have, for there is no general rule for changing from nominative to genitive that applies to all the nouns and adjectives, as in the other declensions. But there is a rule that applies to all those ending in *as* (excepting *asclepias*), and more than one-fourth of them end thus. Rule: To place in the genitive change the termination *as* to *atis*—*e.g.*, *sulphas*, *sulphatis*, *bicarbonas*, *bicarbonatis*, *boras*, *boratis*. And another rule that applies to the few that end in *r*, namely, add *is*—*e.g.*, *ether*, *etheris*, *liquor*, *liquoris*. The remainder, whose end-

ings change when placed in the genitive, are found below and must be memorized—not a difficult task, as many of them are very similar.

<i>Nominative.</i>	<i>Genitive.</i>	<i>Nominative.</i>	<i>Genitive.</i>
Adeps,	Adipis.	Juglans,	Juglandis.
Alcohol,	Alcoholis.	Lac,	Lactis.
Alumen,	Aluminis.	Limon,	Limonis.
Anthemis,	Anthemidis.	Macis,	Macidis.
Arsenis,	Arsenitis.	Mel,	Mellis.
Asclepias,	Asclepiadis.	Mite,	Mitis.
Aspidosperma,	Aspidospermatis.	Molle,	Mollis.
Bisulphis,	Bisulphitis.	Mucilago,	Mucilaginis.
Bos,	Bovis.	Nitris,	Nitritis.
Calx,	Calcis.	Nux,	Nucis.
Cantharis,	Cantharidis.	Pepo,	Peponis.
Carbo,	Carbonis.	Physostigma,	Physostigmatis.
Chloral,	Chloralis.	Pix,	Picis.
Colocynthis,	Colocynthidis.	Pulvis,	Pulveris.
Confectio,	Confectionis.	Radix,	Radicis.
Cortex,	Corticis.	Rhus,	Rhois.
Effervescens,	Effervescentis.	Rumex,	Rumicis.
Erigeron,	Erigerontis.	Sapo,	Saponis.
Fel,	Fellis.	Semen,	Seminis.
Flexile,	Flexilis.	Solubile,	Solubilis.
Glaciale,	Glacialis.	Styrax,	Styracis.
Hamamelis,	Hamamelidis.	Sulphis,	Sulphitis.
Hypophosphis,	Hypophosphitis.	Theobroma,	Theobromatis.
Hyposulphis,	Hyposulphitis.	Trituratio,	Triturationis.
Iris,	Iridis.		

The remainder of this declension are those whose endings do not change when placed in the genitive; therefore we can place these with the three pharmacopœial nouns of the fourth declension whose endings do not change when placed in the genitive, with those of the Pharmacopœia which are indeclinable. It should be borne in mind that this remainder of the third and those of the fourth declension do change their endings in some of the other cases, but as we are considering only the nominative and genitive singulars, we can place them with those whose endings do not change in any case.

Remainder of Third Declension.

<i>Nominative.</i>	<i>Genitive.</i>	<i>Nominative.</i>	<i>Genitive.</i>
Animalis,	Animalis.	Digitalis,	Digitalis.
Antimonialis,	Antimonialis.	Dulcis,	Dulcis.

Barbadensis,	Barbadensis.	Sinapis,	Sinapis.
Canadensis,	Canadensis.	Solubilis,	Solubilis.
Cannabis,	Cannabis.	Viridis,	Viridis.

Fourth Declension.

<i>Nominative.</i>	<i>Genitive.</i>
Fructus,	Fructus.
Spiritus,	Spiritus.
Quercus,	Quercus.

Indeclinable nouns of the Pharmacopœia:

<i>Nominative.</i>	<i>Genitive.</i>	<i>Nominative.</i>	<i>Genitive.</i>
Amyl,	Amyl.	Matico,	Matico.
Buchu,	Buchu.	Menthol,	Menthol.
Cajuputi,	Cajuputi.	Naphthol,	Naphthol.
Catechu,	Catechu.	Pyrogallol,	Pyrogallol.
Cusso,	Cusso.	Salol,	Salol.
Diachylon,	Diachylon.	Sassafras,	Sassafras.
Elixir,	Elixir.	Sumbul,	Sumbul.
Eucalyptol,	Eucalyptol.	Thymol,	Thymol.
Kino,	Kino.		

Example of prescriptions containing ingredients of the third declension whose endings change when placed in the genitive:

R—Pulveris zingiberis,
Pulveris piperis, aa ʒi. M.

Sig.—Make a paste with hot water and apply.

R—Liquoris calois, ʒiv.

Sig.—Use as a mouth-wash.

Example of a prescription where the endings remain the same:

R—Thymol,
Menthol, aa gr. x;
Spiritus sassafras, ʒii. M.

Sig.—Apply on cotton.

There are a few exceptions, where the nouns of the Pharmacopœia are neither in the nominative nor genitive case, which are found in such titles as "hydrargyrum cum creta," "syrupus hypophosphitum cum ferro," etc., the "creta" and "ferro" being in the ablative case, placed there by the preposition *cum*, and in a prescription remain the same, thus:

R—Hydrargyri cum creta, ʒi.

It is fully realized that only a meager amount of Latin knowledge has been given in the foregoing pages, but the fact must be borne in mind that ninety-five per cent of the prescriptions written involve only the nominative and genitive cases (singular). Those

who desire more than the superficial information here given should obtain a book on prescription writing, Gerrish's being an excellent one, and from which much has been taken for this article.

We will now consider a few prescriptions written by dentists, showing what the mistakes are and how remedied. These prescriptions are not the offspring of a fertile imagination, but true copies of prescriptions written by dentists, and can be found on file in different drug stores:

No. 1.

R—Tr. aconite, ʒi;
Chloroform, ʒii;
Tr. iodine, ʒi. M.

Sig.—External use. Dr. —

First, the "tinctures" are abbreviated. Second, the ingredients are written in English. Now one is at liberty to write his prescriptions in English if he chooses, but it is not considered proper, and there are several reasons against it. One is, that the titles of all drugs and preparations of the Pharmacopœia are in Latin, as are the titles of the different books on materia medica and botany. Another is, that Latin is the crystallized language for scientific nomenclature, and is not subject to variations which modern languages are always undergoing. Again, the Latin name of a drug applies to that drug and to no other, while in English one name is sometimes used for two or more drugs; for example, *apocynum cannabinum* and *cannabis indica* are both called Indian hemp; *chima-philæ* and *gaultheria* are both called wintergreen; *serpentaria*, *cimicifuga*, *senega*, *asarum* and *eryngium* are all called snakeroot. If one writes the ingredients of his prescription in English, he should be consistent and finish it in English, writing "mix" instead of M. for *misce*, and "write" instead of *sig.* for *signa*.

The prescription corrected appears thus:

R—Tincturæ aconitæ, ʒi;
Chloroformi, ʒii;
Tincturæ iodine, ʒi. M.

Sig.—For external use. Dr. —

No. 2.

R—Tr. aconit.,
Chloroform,
Iodine, aa ʒii. M.

Sig.—External use. Dr. —

Besides the criticisms of No. 1 which apply to this, we have the last ingredient, "iodin." The dentist wanted the tincture, but wrote for iodine, the same as the laity (some of them) come into a drug store and ask for fifteen cents' worth of iodine. The druggist puts up the tincture in the case of the laity, realizing their lack of knowledge; but prescriptions written by professional men are supposed to be compounded as written. If this one had been so compounded the result would have been a preparation containing thirty-three and one-third per cent of iodine instead of two and one-third per cent as intended.

No. 3.

R—Morph. sulph., ʒi;
Sacch. lac., ʒss.
M. Div. in po. No. vi.

Sig.—One powder every 4 hours.

In this prescription every dentist will probably be able to detect one mistake besides those that appear in No. 1 and No. 2; but there is another, namely, the name and address. Every prescription-writer should put his name and address on every prescription that he writes; then if there is any question in the druggist's mind of whether or not the writer intended to write as he has, he can communicate with him without the patient being aware of the fact, and have the mistake, if any, corrected. Your prescription may not go to the druggist to whom you intended or expected it would and who recognizes your chirography, but to one who knows you not; and if you have made a mistake and the druggist wishes to communicate with you, he can do so only by asking your name and address of the patient, or whoever brought the prescription, thus arousing their suspicion, when it could have been avoided. In this particular case the druggist was quite sure that one grain of sulfate of morphine was intended, but it would have been better if he could have communicated with the writer and been positively sure of the fact. The prescription as corrected:

R—Morphinæ sulphatis, gr. 1;
Sacchari lactis, ʒss.
M et in chart. vi div.

Sig.—One powder every 4 hours. Dr. —, 113 — st.

No. 4.

R—Phenacetin, grs. xxx.
Div. in chart. No. vi.

Sig.—One every 3 hours till relieved. Dr. —, 113 — st.

Besides the abbreviation of the drug, we have an improper abbreviation for the Latin *grana*, which should be "gr." for both singular and plural. Corrected:

R—Phenacetini, gr. xxx.

In chart. vi div.

Sig.—One every 3 hours till relieved. Dr. —, 113 — st.

No. 5.

R—Ext. hamamelis fl., ℥ii.

Sig.—Use as directed. Dr. —, 113 — st.

The dentist intended the so-called extract of hamamelis of the shops, but the patient received what he wrote for, viz, the U. S. P. fluid extract of hamamelis, made by percolation and evaporation, and containing the tannin and extractive matter of the drug and about thirty per cent of alcohol, instead of the non-official preparation which is made by distillation and contains the volatile principles of the drug only, and about fifteen per cent of alcohol, and for which he thought he was writing. The "use as directed" will be criticised farther on, where it will be more impressive. The corrected prescription appears thus: R—Extracti hamamelidis destillatæ, ℥ii; or, better still, the National Formulary title, thus:

R—Aquæ hamamelidis spirituosæ, ℥ii.

No. 6.

R—Pond's Extract, Oss.

Sig.—Use as a mouth-wash. Dr. —, 113 — st.

The writer was surprised at the price charged, and thought the druggist was trying to double his proverbial one hundred per cent, not realizing that he had written for a proprietary article and that the druggist had put up just what was written for. Of course a dentist is at liberty to write for "Pond's Extract," "Hood's Sarsaparilla," or any other proprietary medicine that he wishes, but he should not confuse the coined title of a proprietary article with the recognized title of a universal product of the drug store. The writer wanted the so-called extract of hamamelis, and should have written as it appears above in No. 5 corrected. Or, if he was afraid there were two grades and wanted the best without having his patient pay an enhanced price for a name, he should have written thus: R—Extracti hamamelidis destillatæ opt. Oss. As a matter of fact, all reliable druggists carry but one grade, and that is the *best*, which is distilled from the fresh twigs of the shrub *Hamamelis Virginica*.

No. 7.

R—Tinct. aconiti, ℥i,

Sig.—As directed. Dr. —, 118 — st.

A prescription-writer should never write "as directed" after "signa," one reason being that it may prevent the druggist from detecting a mistake. For example, a prescription written thus:

R—Tincturæ gelsemii, ℥i;

Syrupi, ad. ℥ii. M.

Sig.—As directed. Dr. —, 118 — st.

This would be compounded by the druggist without realizing the writer had made a mistake; but if written thus:

R—Tincturæ gelsemii, ℥i;

Syrupi, ad. ℥ii. M.

Sig.—Teaspoonful every 3 hours. Dr. —, 118 — st.

the druggist would at once come to the conclusion that the writer had made a mistake, either in the quantity of the active drug or the finished product, or in the dose. Another reason is that the patient or those attending may forget the whole or part of the verbal directions given by the writer, as happened in the case No. 7. This was written by an M. D., but will serve as an example to dentists, as they write for this same drug. The writer gave the verbal directions to the patient or attendant: "Take one teaspoonful of the medicine and mix with a wineglass of water, and take a teaspoonful every four hours." The receiver of the directions forgot them, or part of them rather; he remembered the teaspoonful part; he was positive it was a teaspoonful every four hours, but had forgotten about the water. A teaspoonful of the medicine was given, and the result can be imagined without description.

No. 8.

R—Acetanilid, gr. x.

Ft. chart. No. v.

Sig.—One every 4 hours. Dr. —, 118 — st.

In such a case as this the druggist is always in more or less doubt. He is not sure whether the writer wants the ten grains divided into five powders, or the five powders ten grains each. If the former, it should be written thus:

R—Acetanilidi, gr. x.

In chart. v div.

If the latter, thus :

R—Acetanilidi, gr. x.

Fiat chart. tales No. v.

In some cases the quantity would show the druggist how to proceed, but in this case it would not.

No. 9.

R—Olei ricini, ℥iss;
 Aquæ gaulther., ℥ss;
 Mucilag. acaciæ, q. s. ℥iv.
 M.—Ft. emulsion.

Sig.—Tablespoonful every 2 hours till result. Dr. —, 113 — st.

Besides the abbreviations, we have the q. s. The writer wanted enough mucilage added to make four ounces, but the druggist would have been justified in using four ounces of the mucilage, taking the *quantum sufficit* to mean that the writer considered four ounces a sufficient quantity to make an emulsion, and thus making a six-ounce mixture. It should have been written thus:

R—Olei ricini, ℥iss;
 Aquæ gaultheriæ, ℥ss;
 Mucilaginis acaciæ, q. s. ad. ℥iv.
 M.—Ft. in emulsione.

Or the "ad." without the q. s., the q. s. being really superfluous.

No. 10.

R—Quinin sulph.,
 Ferri reduct., aa gr. 80.
 M.—In pill. 80 div.

Sig.—One after each meal. Dr. —, 113 — st.

Besides the abbreviations of the ingredients, we have the abbreviation "pill." which should be "pil.," the correct abbreviation for both singular and plural; and it is not customary to use the Arabic numerals. Corrected:

R—Quininæ sulphatis,
 Ferri reducti, aa gr. xxx.
 M.—In pil. xxx div.

Sig.—One after each meal. Dr. —, 113 — st.

No. 11.

R—Æther sulphuric, ℥viii;

Sig.—For dentist's use. Dr. —, 113 — st.

We have the abbreviations and the wrong title. The dentist wanted the U. S. P. ether, but this does not contain any sulfur, therefore his title is a misnomer, and has not been used officially by the Pharmacopœia since the 1840 edition. Physicians seldom make this mistake now, but dentists often do. In Squibb's Ephemeris, under ether, he says, "In relation to this article, it is very curious

that the old bad name 'sulphuric ether' is still not uncommon even among those who ought to know better." Corrected it reads:

R—Ætheris, §viii.

Sig.—For dentists' use. Dr. —, 113 — st.

No. 12.

R—Aquæ calcis, §vi.

Sig.—Use as a mouth-wash at night. Dr. —, 113 — st.

Should be R—Liquoris calcis, §vi, the official title. An U. S. P. water is the solution of a volatile substance in water, and an U. S. P. solution is a preparation made by dissolving a non-volatile substance in water. Calcium hydroxid is a non-volatile substance.

No. 13.

R—Pyrozone, U. S. P., §iv.

Sig.—Use with equal parts of water as a mouth-wash. Dr. —, 113 — st.

Pyrozone is not an U. S. P. title and probably never will be, but a coined name owned by one firm, and should not be written for unless the writer wanted this particular firm's product; but instead, hydrogen dioxid, or, better still, the new title of the 1890 Pharmacopœia, which is the proper way, thus:

R—Aquæ hydrogenii dioxid, §iv.

No. 14.

R—Tinct. aconiti, §i;

Aquæ peppermint, §iii. M.

Sig.—Teaspoonful every 4 hours. Dr. —, 113 — st.

Besides the abbreviation, we have a hybrid title in "aquæ peppermint," *aquæ* being Latin and "peppermint" English.

Certain abbreviations in prescription-writing are positively dangerous; for example, acid. sulph. may mean acidum sulphuricum, or acidum sulphurosum. Acid. hydroc. dil. may mean acidum hydrochloricum dilutum or acidum hydrocyanicum dilutum.

Tr. opii camp. (paregoric), containing .04 per cent of opium, if poorly written, might be read, Tr. opii comp., a preparation made by Squibb, containing two per cent of opium—five times the amount in paregoric. Potass. sulph. is an abbreviation for potassii sulphas, potassii sulphis, or potassa sulphurata. Cinchon. sulph. might be cinchonidinæ sulphas or cinchoninæ sulphas. Sod. nit. may mean sodii nitras or sodii nitris; and sod. chlor. is an abbreviation for sodii chloras or sodii chloridum.

Following are a few suggestions, facts, etc., which may be of some interest to a few, although somewhat of a digression from the

subject under consideration. We should not use the scruple sign in prescription-writing, for if poorly written it might be taken for a dram. Remember that petrolatum is an official title and that vaselin is a coined name for a proprietary article. We should not say lime-water for solution of lime. *Liquor calcis* is the official Latin title, and solution of lime the English. We should not say peroxid or dioxid of hydrogen, but dioxid of hydrogen water, the new title of the 1890 Pharmacopœia. It is our duty to accustom ourselves to new titles as they appear in the United States Pharmacopœia; this book being authority and so recognized by the United States Government. Furthermore, it is not the anhydrous compound H_2O_2 that we mean when we speak of dioxid of hydrogen, but a three per cent aqueous solution of it. We have no more right to say dioxid of hydrogen for dioxid of hydrogen water than we have to say chlorin for chlorin water. Remember that the orthography of the 1880 U. S. P. title, creasote, has been changed to creosote in the 1890; that there is but one "æther" in the 1890 Pharmacopœia, and that it corresponds to the "æther fortior" of the 1880; that the ordinary teaspoon holds more than one dram, and that in figuring doses we should reckon about six teaspoonfuls to the ounce; that it is bad practice to write for an article which has to be given in drops. The drops from different bottles and droppers differ materially, as do the drops of different liquids. Besides, the patient or attendant may make a mistake in the count and give an over or an under dose. Of course teaspoons vary in size; but the discrepancy in the active drug is not so great as with drops, on account of its being in a diluted state. Remember that distilled water is the proper menstruum for silver nitrate, and that peppermint water or any other solvent containing organic matter will decompose it; that all fluid extracts of the Pharmacopœia are uniform in strength and that one minim represents the virtues of one grain of the drug; and that tinctures are much weaker preparations and not uniform in strength, varying from five to forty per cent in the amount of drug which they contain; that the turning red of carbolic acid does not impair its medicinal virtues; that *spiritus glonioni* is the 1890 title for the one per cent alcoholic solution of nitroglycerin, that it was *acidum arseniosum* in the 1880, but that it is now *acidum arsenosum*; that it is *extractum cocæ fluidum* now, instead of *extractum erythroxylî fluidum*; that *acetanilid* is now

official thus: Acetanilidum; that calcii sulphas exsiccatus is the U. S. P. title for plaster of paris; that methyl salicylas is the U. S. P. title for artificial oil of gaultheria, and that it has the physical characteristics and essential constituents of oleum gaultheriæ; that naphthol is the official title for beta-naphthol; that there is no caffein citrate, commercially speaking, and that the Pharmacopœia has caffein, the so-called alkaloid, and citrated caffein, a mixture of caffein and citric acid, but not a chemical compound; that elixir aurantii 1880 has been superseded by elixir aromaticum 1890; that ink is preferable to lead in writing prescriptions; that the United States Pharmacopœia is revised every ten years, and that so soon as a new revision comes out the old one becomes like a last year's directory—it may be right and it may be wrong.—*Cosmos, March, 1899.*

* * *

DECROWNING TEETH AND IMMEDIATE EXTIRPATION OF PULP. By Dr. R. E. Sparks, Kingston, Ont. I remember reading a few years ago an article upon crown and bridge-work in which the essayist, describing the preparation of abutments, said that some recommended the decrowning and immediate extirpation of the pulp by punching it out with a wooden plug. He, however, advised anyone attempting the operation to perform it upon a weak female, or to be sure he, the operator, was in good physical condition. He evidently wished to convey the idea that the operation would be so excruciatingly painful that the victim of the outrage would be prepared to fight. The writer had either never tried the operation or had had an unfavorable case, or for some reason had been unsuccessful.

As this is the operation generally practiced for immediate pulp-extirpation in case of decrowning, it may be as well to refer to it here; and let me say, that while a description of the operation sounds barbarous it is comparatively painless. It is nothing to be compared to the pain of extirpating with a broach a pulp of which a little of the upper end is not fully devitalized. To make the operation successful a few precautions are to be observed. For the information of any who may never have practiced the operation it may be well to briefly describe it.

With a disk cut a groove across the labial and palatal or lingual surfaces of the tooth to be decrowned, at the desired point. Have prepared a few points of orange-wood or hickory about two or three

inches long. The ordinary wedgewood rods answer well. Make the points about the length, shape and size of the canal in the tooth to be operated upon. Saturate them with some strong disinfectant. I have found pure carbolic acid very satisfactory. Have on hand a light mallet, also have the engine in position charged with a long, pointed, cone-shaped bur. Everything being ready, with a pair of excising forceps, one blade of which is placed in each groove previously made, the crown is removed. If the canal be found to have been exposed at or near its greatest diameter, one of the prepared points should be immediately inserted, and while held in position given a sharp, quick blow with the mallet. An additional light blow or two may be given to insure its advance to the apex of the canal. If the plug be withdrawn, such of the pulp as may not have been forced out of the canal will be found adhering to the sides of the plug. The preparation of the canal for the post may be proceeded with at once. Indeed, some cut or twist off the plug and proceed to drill the post hole, leaving the plug as a filling for the apex. I have done this. An advantage of withdrawing the plug is, that if it has failed to reach the apex a broach or drill may be advanced. If it be found when the crown is snapped off that the canal be not exposed at its greatest diameter it may be enlarged with pointed engine bur and extirpation proceeded with.

Whatever is to be done, however, must be done without delay. The shock to the nerve when the tooth is decrowned is so sudden, that the injury is not perceived at the seat of sensation. It frequently occurs in cases of accidents that severe injuries are sustained, as loss of fingers or toes, or wounds inflicted, without the victim being aware of the injury. Sensation soon returns, however, hence the necessity of haste in the removal of pulps in the case of immediate extirpation. This operation is practicable only in teeth having regularly-shaped single-root canals, as the six anterior superior teeth and second bicuspid, and the ten anterior lower teeth.

I can conceive of cases even among the teeth named where this operation could not be successfully performed—for instance, in case of crooked and irregularly-shaped roots, or in very small flat-shaped lower incisors where the canal may be very fine and ribbon-shaped; or where a tooth is largely decayed, exposing the pulp above the point at which it is desired to decrown, or where the pulp has

receded beyond the point at which it is decided to decrown. Here the pulps would fail to receive the shock necessary to anesthetize them. In such cases the pulps may be anesthetized by cocain applied and its action hastened by means of compression, or by cataphoresis.

Indeed, many recommend drilling into the tooth to be decrowned, so far as feasible, and applying cocain as an anesthetic. But as the effect of cocain cannot be forced through dentin except by cataphoresis, and very few have cataphoretic batteries and appliances, and as it is seldom feasible to expose a pulp in a healthy tooth sufficiently to anesthetize by cocain under pressure, we seem forced to resort to the first operation described.

The advantages of immediate root-extirpation are various: 1. Saving of time. This is especially an object where a patient has come a distance and desires the work completed at earliest possible moment. 2. Danger of toxic effects of arsenic are averted. 3. Severe pain which sometimes follows the application of arsenious acid for devitalization of the pulp is avoided. 4. Danger of subsequent periostitis is reduced to a minimum.—*Dominion Journal, March, 1899.*

* * *

USE OF THE WATCHMAKER'S EYEGLASS IN DENTISTRY. By Dr. Stewart J. Spence, Harriman, Tenn. If the value of an instrument should be measured not by its high price nor complicated structure, but by its everyday usefulness, the humble little tool whose virtues I am proud to champion would overvalue some of our thirty to fifty dollar appliances. I refer to the magnifying eyeglass used by watchmakers. Of course dentistry is familiar with the ordinary magnifying glass which is sold in the depots and meant to be held in the hand. These are undoubtedly much better than nothing. But as dentists are not blessed with three hands, the utility of these glasses is very much limited. What we need is a glass which can be used while in the act of operating, and also one which can be inserted some distance into the oral chamber. The watchmaker's eyeglass supplies this need. I have frequently held mine to the eye during the whole time of the excavation of a cavity or the insertion of a gold filling.

On dark days, and when the shades of night are beginning to fall, or when the eye has become fatigued by being focused long on one small spot, and when you want to see more clearly what you are

doing in an obscure posterior cavity, and when you are drilling retaining points, and when you are malleting the last pieces of gold along the margin of a cavity, how good and pleasant it is to be able to place one of these little instruments to your eye and see things clearly.

It must be admitted that it is not altogether pleasant to a novice to hold his glass at his eye for any considerable length of time. It requires some experience to do this without conscious effort. For such cases there are glasses made with a spring attachment to go around the back of the head. But my experience with such assistance has been that it interferes somewhat with one's pointing the eyeglass just where one desires.

A more serious difficulty is, that the focus of the watchmaker's eyeglass is such as brings the dentist's face a little too close to that of the patient. But this can be remedied, and at the same time a somewhat enlarged magnifying effect obtained, by removing the lens from the frame (which is easily done after heating the vulcanite) and extending the frame outward about an inch and a half by adding to it a cylinder of aluminum, attaching the lens to the distant end of this tube and telescoping the nearer end into the vulcanite frame.

Watchmakers say that the eye that uses the eyeglass is stronger than the other.

There is another eyeglass used by watchmakers which is almost as useful in dentistry as that which we have been considering. I refer now to one the lens of which is only about three-eighths of an inch in diameter, and the magnifying power about four times greater than that of the other. This one cannot be used by dentists at the eye, because its focal point is only three-fourths of an inch from the lens, but of course the eye can be placed at almost any distance from the glass, and thus the instrument can be used even when thrust far into the oral chamber.

I employ this higher power extensively in detecting those very small approximal cavities which cannot by the naked eye be distinguished from discolorations, and also for examining the margins of cavities before and after filling; for examining a suspicious sulcus; for detecting cracks in enamel, etc. By this means one can see whether his approximal gold filling is sufficiently dressed down, and whether there is a flaw at its gingival margin. With the

electric mouth lamp on the inside, and this little lens on the outside, you can see right through an otherwise obscure approximal space, detecting an incipient decay or the slightest defect in a filling.

As the attempt to focus this eyeglass on a posterior molar meets with difficulty, because the vulcanite frame and the operator's finger tend to throw the tooth into the shade, therefore the greater portion of the vulcanite frame should be sawed away, leaving only a narrow ring of vulcanite to encircle the lens. To this ring should be attached a handle, which should be inclined to the major axis of the lens about forty-five degrees, or preferably be made adjustable.

These watchmaker's glasses are also very helpful while grinding the joints of gum teeth. Altogether I have found their use one of the biggest little things in dentistry.—*Items of Interest, Mar. 1899.*

* * *

DO THE PULPS OF REPLANTED TEETH EVER REUNITE WITH THE TISSUES FROM WHICH THEY HAVE BEEN SEPARATED? By A. H. Fuller, M.D., D.D.S., St. Louis. During the discussion of a paper read before the New Jersey State Dental Society, Dr. Register is reported as having said: "I have had some experience both in implanting and replanting teeth. * * I do not believe for a moment that under any conditions a tooth can be removed, replaced and the circulation in the pulp reestablished. I think such a thing is absolutely impossible," etc. An opinion given in this way makes an impression, especially upon young practitioners, and I think is misleading. I do not believe that the doctor in expressing this opinion expresses that of any great portion of the intelligent members of the dental profession. The literature that bears upon this subject—text-books, transactions and journals—as well as my own experience, certainly leads me to differ with him.

To absolutely prove that a tooth has a living pulp with blood vessels and nerves, and blood circulating through it, is not always practical; but to prove it to the satisfaction of reasonable and observing dental practitioners is not so difficult. Again, to prove a statement of an occurrence which has taken place years before is not always an easy matter, but when the party is truthful and intelligent, and the facts were necessarily impressed upon the mind of the witness by the part he or she took in the occurrence, we should accept such as evidence.

Some cases that would ordinarily be taken as evidence of the

reunion of the pulp after the teeth had been knocked out and replaced are related on pages 35 and 117, Vol. IV, *Dental News Letter*. Again on page 584, Vol. VII, *Dental Cosmos*, Alex. I. Bigelow, Clinton, Mass., at the request of the late Prof. J. H. McQuillen, makes the following statement: "Nine years ago I was running over some logs and accidentally tripped, fell forward, striking on my mouth with considerable force and cutting my lower lip quite through on the upper centrals. I naturally sped to the house, distant about twenty rods; on opening my mouth for inspection one tooth was missing; my father went in search and found it a few yards from where I started. The tooth was inserted and forced home by 'hand pressure,' and remains as firmly articulated and serviceable as the other incisors, the only perceptible difference being a slight yellowish tinge. These are the facts, and so much of the foregoing as will contribute to the cause of science you are at liberty to make use of." On page 31, Vol. VIII, *Dental Cosmos*, Dr. J. B. Davis of Trenton, N. J., relates a case of a student at Princeton College who had three front teeth driven up into the jaw—two centrals and a lateral. He says: "I extracted the teeth, pressed the fractured bone back in place, and then replanted the teeth in their sockets, secured them in place, etc. This was fifteen years ago. The young man is now practicing law in one of our courts, and I doubt the ability of any man to point out the teeth that were replaced." The doctor relates two other cases in the same article. On page 383, Vol. X, *Dental Cosmos*, Dr. H. L. Eades refers to a dentist in Zanesville, Ohio, who had extracted and replaced a molar tooth for a lady that had since done good service for eleven years, and now had to be again extracted, it being found aching from an exposed pulp. On page 534, Vol. XIX, *Dental Cosmos*, Dr. John Allen, before the New York Odontological Society, related a case in his practice where he had replanted four teeth that had been out of the mouth two hours; they were replanted some time since, remained firm, retained their color, etc. Question: Did you fill the roots of the teeth that were kicked out by the horse? Ans.: Dr. Allen. No, sir. My impression is that the nerves united again; but I cannot say positively. I judge only from the fact that the teeth retained their color afterward for twelve years all right.

On page 551, Vol. XXIII, *Dental Cosmos*, Dr. J. Taft, Cincinnati, discussing replantation at the International Medical Congress,

London, says: "In every instance in which a healthy tooth in a healthy person was replaced, he should expect immediate and permanent union. The presence of pericementum upon the root is valuable but not essential to repair." He had seen cases in which it had been removed and the tooth became quite firm and continued to be so, and in one of these instances the *pulp vessels* had united and the pulp lived. During the same discussion, page 552, Dr. I. Jozsef, Buda Pesth, related a case where he extracted an irregular and impacted lower molar, unavoidably removing the second bicuspid. The latter he replaced and two years after the tooth was firm and as sensitive to heat and cold as were the neighboring teeth. He further stated that in Bonn there was a specimen of a longitudinal section of a dog's jaw and tooth. The latter had been replanted and the blood-vessels of the pulp are shown to be united and continuous with the trunk in the bone. Another and similar case is in Berlin. *Dental Cosmos*, Vol. XVIII, page 442, Dr. L. Rabatz, court dentist in Vienna, Austria, among other things in a long article, lays down the rule: "If the pulp and periodental membrane are sound, replant the tooth at once as it is."

The late Dr. Wm. H. Atkinson, page 304, Vol. XIX, *Dental Cosmos*, says: "I am astonished at Dr. Cutler's unwarranted conclusion that a ruptured pulp can never reunite by being replanted. We have numerous instances of that having been proved positively, where the teeth have been extracted accidentally before they were completely developed; and in other instances teeth have been extracted—rupturing the pulp connections—the tooth replaced, after which the roots were developed to completeness. * * * I have not had the good fortune to have such accommodating cases as to allow me to make such discoveries by the adequate examination after death. I believe I have four or five teeth in the mouths of patients, which have been extracted and replanted and which have living pulps in them. These teeth were fully formed in adults."

In the *Missouri Medical Journal*, 1875, page 63, Dr. R. J. Porre of Cincinnati relates a case: "Julia D., eight years of age, fell from a swing about one hour before she was brought to his office, knocking out the right upper central incisor. The tooth lacked about two lines of bony structure to complete its formation. The alveolar process was also fractured. Tooth replaced in the socket and retained by ligatures. After the tooth became firm, upon

examination by good light and magnifying glass could discover no change in the color of the tooth. When the patient was discharged all the indications were favorable.

In my own practice I have several cases which I am as certain as anything can be, that the pulps have reunited with the ruptured portions remaining in the jaw. One case, a little girl about four years of age, in going up a short flight of stairs fell, and striking her face on the edge of a step, knocked the two central incisors out and into the mouth. I was called in and immediately replaced the teeth, which were in a measure supported in their sockets by the laterals. I make a gutta-percha splint and kept the case under observation until the teeth became firm. The pulp of the right superior central died and was afterward removed and canal filled; the other reunited and the tooth was healthy, remaining so until the root was absorbed, and the crown was picked out by the father, as was that of the dead tooth. Another case, a lady patient who when a little girl fell from a swing, knocking out the two superior central incisors; her father being a dentist, replaced them in their sockets immediately, and calling in Dr. J. Y. Crawford, now in Nashville, a retaining splint was made and adjusted by the doctor and the teeth securely retained in place. This was at least twenty years since. The teeth to-day are both sound and in every way beautiful, and the gums around them perfect in every outline.

Cases almost without number can be brought to prove that the pulps of teeth frequently unite with the parts from which they have been separated, and this fact should be known, as in numerous cases it would be a factor in determining what would be the best thing to do in case of an accident of this kind.—*Review, February, 1899.*

* * *

PLUGGERS AND MALLETS AND THE LAWS THAT GOVERN THEIR USE. By W. H. Robinson, D.D.S. Read before Oakland, Cal., Dental Club, Dec. 3, 1898. Did you ever estimate carefully how important a part of your filling is produced by the force imparted by the mallet? Suppose the force imparted to the plug by the average blow of the mallet sufficient to raise an ounce one foot; take one of the large gold plugs of which some of us are so proud, and that we spend say one and one-half to two hours malleting into place; estimate the number of blows you strike, and you will find your plug consists of three to ten pwts. of gold and about

one ton of force. This *force* is both real and visible; although we commonly regard it as neither. When I tell you I have fabricated an epitome on Dental Skill that consists of $\frac{1}{4}$ oz. of "G." and one ton of "F.," your minds immediately center on F. as the most important factor, because so much the larger. The force absorbed by a filling in its construction is an important factor; and *that factor* and the *media* that produce it is our theme to-night.

A mallet may weigh either half an oz. or ten half ozs., a plugger weigh an oz. or one-twentieth of an oz. We readily see that a five-oz. mallet striking a one-oz plugger produces a vastly different effect from a one-oz. mallet striking 1-20 of an oz. plugger. Our ordinary plugs receive in their construction from 3,000 to 50,000 blows; and the force of these blows absorbed by the gold in changing it from the soft, laminated mass into the solid plug is sufficient to raise from 100 lbs. to 1 ton, 1 foot. The force is imparted by operator's muscle to mallet; by mallet to plugger; plugger to gold; here a certain part of this force is changed into work or effect produced on gold and is absorbed or neutralized, the remaining force goes from plug to tooth, tooth to alveolus, and there its effects on victim become an interesting study to the dentist.

We admit that fillings of all grades, good, bad and intermediate, are put in by mallets varying in weight from $\frac{3}{4}$ of an oz. to 4 oz., with pluggers varying from 1 pwt. to 1 oz. We all admit that there is a mallet of certain kind and weight and a plugger of certain kind and weight, and that these properly manipulated would give better results than mallets and pluggers of any other kind or weight. Can we solve this conundrum. What *kind* of mallets and pluggers are these?

Let us try: The weight of a moving body into or multiplied by its velocity gives the momentum or quantity of motion. A mallet weighing 4 ozs., moving with a velocity we call 10, strikes a plugger weighing 1 oz.; then if the contact surfaces were perfectly elastic the plugger would move with the same velocity as the mallet, 10; and the velocity of mallet is retarded $\frac{1}{4}$, and it then moves after the plugger with a velocity of $7\frac{1}{2}$, but as the distance a 4-oz. mallet is moved in the operation of filling is only about an inch, and the striking surface seldom perfectly elastic, the mallet and plugger practically move forward together and the plug receives an impact of both mallet and plugger, and in this the weight is 5 ozs., velo-

city about $7\frac{1}{2}$, momentum $37\frac{1}{2}$. There is another important factor to be considered; that is, the striking force and energy, and these are closely allied with momentum. We must get a clear idea of these two factors, *Energy* and *Momentum*; and accurately and definitely understand what they are, and their relation and difference, or my essay will be a failure.

Suspend a block of lead weighing 2 pounds by a string 2 feet long; against this lead adjust a piece of copper plate thick as ordinary paper; against this copper plate adjust a plugger, impact this plugger with mallet of 1-oz. or 4-oz. weight, giving each velocity enough to force plugger point through copper plate. It is easy to see that the 1-oz mallet must move with greater velocity than the 4-oz. mallet. And at first look it seems it should move with four times the velocity to produce the same result, but this is not so. When a 1-oz. and a 4-oz. mallet, moving with the velocity of 10, strike an adjusted plugger against the suspended block, they impart to it their momentum (quantity of motion). The suspended lead oscillates 4 times as far when struck by the 4-oz. mallet as when struck by the 1-oz. mallet. Now give the 1-oz. mallet 4 times the velocity, and we find by multiplying the weight by the velocity:

Weight of Mallet	Velocity	Momentum
1 oz.	40	40
4 oz.	10	40

And under these blows the oscillation of the lead is the same; i. e., the same quantity of motion is imparted to the lead. But note this point carefully: Blows of same momentum, no matter what the weight of mallet is, impart the same motion to the lead; but the effect on the copper plate is greatly different; the blow of light mallet makes four times as deep an impression on the copper as blow of heavy mallet. The oscillation of the lead measures the momentum of the pluggers, but the impression on copper plate measures the striking force or energy of the blow. The weight multiplied by the velocity measures the momentum, but the weight multiplied by square of the velocity measures the striking force or penetration of plugger into the copper, and gives us this equation:

Weight of Mallet	Velocity	Momentum	Striking Force
1 oz.	40	40	1600
4 oz.	10	40	400

What kind of a blow do we want in plug construction? The blow

must have as its primal attribute force enough to weld the gold; change it from the soft pellet into a hard filling; and secondly, the blow must not fracture the cavity walls, nor give too much shock to tooth and adjacent tissues. You all know that the shock imparted by mallet through sensor nerves is not measured by figures or formula, but by the impression the blow conveys to the sensorial consciousness of the victim. A tooth is not a strong body held in a mechanical clutch, but a frail one held in sensitive tissue; often in a sensitive person's mouth. Hence the impact best adapted to plug construction in all these various conditions becomes a complicated consideration that cannot be determined wholly by mechanical laws acting on inanimate matter. But clearly the blow we want is that which will condense the gold with the least concussion or shock to the tooth and its environments.

Test our sample blows on the suspended block and your test will demonstrate the formula we have given. But when you test our sample blows on your patrons you will find it much more difficult to arrive at correct results. Still we hold that our experiment on the lead and copper plate has given us not only useful hints, but actual knowledge applicable to every-day practice.

Take a dozen porcelain metal plate teeth, put their pins through plate and then try the effects of riveting heads on the projecting pins; use hammers weighing from $\frac{1}{4}$ to 4 ozs. and you will learn something about riveting. With the light hammer you find the operation easy and break no teeth; with the $\frac{1}{2}$ -oz. hammer you must be more careful; as your hammers increase in weight you break more teeth, till you reach a weight at which you cannot bur the rivets without breaking the tooth. Now drill representative cavities into your porcelain teeth; fill then with gold, using mallets from 1 oz. to 4 ozs., and pluggers weighing from 1 pwt. to 1 oz. and you will learn another useful lesson. It is, that with mallets from $\frac{1}{2}$ oz to 1 oz. and plugger so light that it has only sufficient strength to convey the impact of mallet to gold—say a long cambric needle—you can fill frail porcelain teeth without breaking them, while with heavy pluggers and mallets all the teeth will break. Clearly then, if we try our experiment on natural teeth in the mouth our mechanical devices and results will be under the same law, and the effects the same on all inanimate materials, whether they appear so or not.

In our sample blows a 1-oz. mallet, with a velocity of 40, gave us a momentum of 40, and striking force $10 \times 40 \times 40 = 1600$. A 4-oz. mallet with a velocity 10, gives the same momentum, but only a striking force of 400. Mark this: All the momentum imparted by a blow on gold in a tooth is imparted as shock to tooth and connecting tissues. Here both mallets impart the same shock, but the light mallet, while imparting its shock or momentum also on same point at same instant, makes an effect on the plug we called striking force or energy: i.e., it does four times as much work.

Let us analyze further this striking force or energy. It is said that if you suspend a large plate of glass, fire a Mauser rifle at it, the bullet will make a neat hole through it, with no radiating fractures. The oscillation of the glass measures the momentum received from the bullet. The hole in the glass indicates the striking force. A baseball player catches a ball weighing 4 ozs. with a velocity of 100 yards a second. Here his hand receives a momentum of 400, and a striking force of 10,000. But we see little difference in the manifestation of momentum and striking force on his hands; but take a bullet weighing 1 oz., with a velocity of 400 yards per second, and the momentum same as baseball, the striking force would be too much for even the calloused hand of the trained catcher. When the mechanic is riveting, he uses a light hammer and quick blow; the main force and effect of the light, quick blow is spent in burring or flattening the end of the rivet. What he wants is a blow with a maximum of striking force and minimum momentum to expend its energy on immediate point of contact, so as to create the least disturbance in materials being riveted.

Striking force we see is the immediate effect of the moving body at point of contact on the work done. The kind of impact a dentist wants is one that expends most force in welding and consolidating the gold and imparts the least shock to tooth and adjacent tissues. And again we ask what kind of blow is that? What is the weight and velocity of the mallet that produces it? In trying to solve this problem let us remember that there are three conditions imperative: I. Our impact must weld the gold; must produce cohesive condensation of the gold. II. The impact must not break the tooth or cavity walls. III. It must be such as the victim can endure during the operation. IV. And we must measure the impact by all three of these conditions.

Let us assume that a welding force—striking force of say 400 to 500 is necessary to condense gold. And we have a mallet, weight $\frac{1}{2}$ oz.; velocity 30; momentum 15; striking force 450. And we have a mallet, weight 4 ozs.; velocity $10\frac{1}{2}$; momentum 44; striking 440. Measuring the effect of these blows on the suspended lead, the heavy mallet moves it three times as far as the light mallet, while the impressions made by plugger on copper plate are about equal. Now how do the blows affect gold, tooth and victim in actual practice? We are satisfied beyond doubt that the light mallet would produce much less shock to the tooth and person. Theoretically the shock is only $\frac{1}{3}$ as much. In fact on inanimate bodies the shock of the light mallet is only $\frac{1}{3}$ that of the heavy one, and we believe this law holds good to a *great extent* in actual practice; and if there is no variation in the law of force, when judged by sensation of living persons instead of effects produced on inanimate matter, then our summary would be: weight of mallet $\frac{1}{2}$ oz.; velocity 84; momentum 42; striking force 3528; weight of mallet 4 ozs.; velocity $10\frac{1}{2}$; momentum 42; striking force 440. But admitting the light mallet produces twice the shock in proportion to its momentum; even then the blow of the light mallet, strong enough to weld gold, would not impart $\frac{1}{4}$ the shock to jaws and adjacent tissues that the blow of heavy mallet would.

All automatic mallets are objectionable, because they are automatic. Their impacts cannot be directly regulated by the dentist's intelligence, and in all of them the velocity is low and the main force of the blow is expended in retarded momentum; too much of the force of their impact is expended as shock to the tooth and adjacent tissues and too little in direct work on the filling.

We have a wide range of opinion as to what kind of face is best on the mallet. But opinions here fortunately can be brought to accurate scientific tests. Both mallet and plugger are inanimate and governed strictly by physical laws. You remember in our old school books the suspended balls and the experiments made with them demonstrating the law of striking bodies. Suspend by strings three steel balls, by their side suspend three more of equal weight—one soft putty, one lead, and one steel; pull the putty ball away from the other one foot and let it go. It strikes the steel ball, gives it half its momentum and both balls move half the distance with half the velocity the putty would have moved had it not been retarded by

striking the other ball. Do the same with the lead ball; there may be a slight rebound and then both balls, like the putty ones, move forward, but the struck ball with a greater velocity than the striking one. Now draw the steel ball back one foot; let it fall and strike the other steel ball; immediately the moving ball imparts all its momentum to the other ball, then stops, and the struck ball moves forward with same velocity as falling ball had when it struck the other.

This experiment demonstrates the effect of impacts between bodies entirely inelastic, like putty; slightly elastic, like lead, or elastic, like steel. This experiment also enables us to accurately measure the efficiency of an impact of a mallet with a face of lead, wood, leather, hard rubber, steel, etc. When a steel-faced mallet strikes a steel plugger, the plugger gets all the velocity of the mallet; but the clicking noise is disagreeable. Put a face of lead on your mallet, the noise is stopped, the velocity of your plugger lessened, and the welding or condensing force of your blow diminished at least one-half or more. Consequently all mallets with inelastic faces are deceiving, as their blow decreases in efficiency in exact proportion to the inelasticity or softness of their faces. In other words, let blows be struck by mallets of same weight and velocity, but one with lead and the other steel face, and the blow of steel mallet will do two or three times as much welding of the gold as the blow of the lead-faced mallet. Of course, you can strike hard enough with lead-faced mallet to thoroughly condense gold; but in so doing you produce more shock to tooth and person than with steel mallet, but the absence of the disagreeable noise no doubt enables the victim to some extent to bear the greater shock. Wooden mallets seem to many the happy medium. They have much more elasticity than lead or leather and less noise than hard metal mallets.

Many of us would like to have Dame Nature vary her laws of striking bodies in favor of the dentist and his patrons; but she won't, nor can we evade these laws, no matter how shrewdly we devise. The plugger always hits the mallet as hard as the mallet hits the plugger. We easily see that if the face of our mallet was gold, of same density as the plug we are constructing, and both ends of plugger same size, then each blow would produce same effect on mallet and plug. A blow from this gold-faced mallet would do only half the welding or condensing on the plug that the same blow does

when struck by hard elastic-faced mallet. A moment's thought shows you that the soft-faced mallet is only a delusion. Use your gold-faced mallet with plugger same size at both ends, and the energy of the blow is expended in work done; half on plug and half on mallet. Now put your plugger on hard steel, and the energy of the blow does the same amount of visible work, but it is all done on gold on face of mallet. Reverse this order; make your mallet hard steel, and all the work is done on plug.

Now we come to this question: Gold can be consolidated equally well with either a lead or steel mallet; but the blow of the soft mallet must be about 50 per cent harder. Why? With steel mallet all the energy of blow is expended in visible work on the plug, while with the soft mallet the energy of the blow is expended in visible work on face of mallet. The instant a hard-faced mallet strikes, the plugger moves with the full velocity of the mallet, but when struck by a soft-faced mallet the plugger does not take the full velocity of the mallet, but the velocity of the mallet diminished by plugger going into face of mallet, instead of forward from it into plug. The object struck receives the same momentum from mallet whether hard or soft, but as the soft mallet must have nearly twice the velocity to give same striking force as hard mallet to plugger, we see the soft, noiseless blow of the soft mallet gives twice the jar to the tooth and tissues, or the equal blow of the soft mallet does only half the work in plug construction. And yet while this is absolute law as to inanimate bodies, it may be possible that the same shock of the noiseless mallet is easier endured by some persons.

Pluggers. We all know considerable about pluggers, yet if what we don't know were written it would make a very instructive essay. The old hand plugger needed strength and weight, and about the only limit on their weight was the cost of steel. We have some ancient specimens in our office that consist of 4 to 5 ozs. solid metal. Of course, when the mallet came into use as a dental instrument, we naturally adapted the mallet to the pluggers then in vogue. Strange as it may seem, we recollect lots of discussions and suggestions in our journals about the weight of the mallet, but we do not recollect of ever having heard or seen a word about the weight of the plugger, except what we personally have said and the remarks induced thereby. We recollect Dr. Atkinson, who reintroduced the mallet as a filling instrument, advising mallets of 8 ozs.,

and these were none too heavy for a 2 to 4 oz. plugger. Imagine a sensitive frail incisor being filled with an 8 oz. mallet and 2 oz. plugger.

Of course, the impacts of these heavy machines were not strictly a blow, but a push. Pluggers have always been too heavy, four or five hundred times too heavy. Pluggers are all too heavy now—five, ten to twenty times too heavy. The Varney pluggers that rank high are 50 per cent too long and five to ten times too heavy. Remember in impaction the weight of the plugger is added to the mallet, and as one body their momentum and energy are expended on plug, tooth and alveolus. Take an oz. plugger and try what kind of a blow is required to give it a momentum and (striking force) energy sufficient to weld gold; then take a 2 oz. plugger and a 1-10 oz. plugger and do the same. You soon discover a wide difference and so does your victim. Of course if you are accustomed to heavy mallet and plugger weighing together say 3 to 5 ozs., and you change to instruments of 1 oz. weight, you are like the man with the old musket when he changes to a Krag-Jorgenson rifle, you do not feel the *force* as you did, and you think no work is being done there is so little *noise*, friction and concussion, but noise, friction and concussion are just what we don't want. Remember all the work done by a blow in tooth-filling is done on the small surface of gold covered by the working end of your plugger.

Now let us try and analyze a blow—your muscle expends force on the mallet, that force gives the mallet velocity, the moving mallet strikes the plugger, the mallet is retarded by it, and imparts its velocity to the plugger and adds its weight. Their combined weight at the rate of their velocity strikes the gold at end of plugger; the primary effect of the blow is to condense the gold, change it from the laminated to the solid form. The gold receives the striking force or energy of the plugger, and the change wrought in the gold measures the work done by the blow; now could we stop the effects of the blow the instant the gold is condensed we should have happy patrons, but the force goes far beyond the work done on the plug. The gold minus the small force it absorbs strikes the tooth with the same force the plugger strikes it, and the tooth strikes the alveolus and so on. Now clearly the blow we want is the one that will do the greatest amount of visible work on the plug, and give the least shock or jar to tooth and person. How

can we get this blow? Assume that the blow necessary to condense the plug will drive the plugger into the gold 1-200 of an inch, you readily see this can be done by a blow from a 1 oz., 4 oz. or 10 oz. mallet. Suppose as we said before, it takes a blow with a striking force of 400 to do this and we have:

Weight of M. & P.	Velocity.	Striking force.	Momentum.
1 oz.	20	400	20
4 oz.	10	400	40
10 oz.	6½	420	65

Again we see in the blow in this variation of mallets the same energy is converted into work done on plug, but the heavy mallet gives three times the actual shock to tooth and tissues adjacent. Again we ask, does the sensational consciousness measure shock by the same rules as the suspended lead? While we can not apply mathematical demonstration to consciousness, yet our own tests and observation and the observation of our brother dentists who have tried light mallets and pluggers universally confirm our experiments on the suspended lead. And this we summarize. Momentum is the force factor of a blow expended in shock or jar to tooth and environments. *Striking force, energy*, is the force factor of the blow expended in *work* on plug. An impact must condense the gold or it is no good. And the impact that does this with least shock is the one desired. Consequently the blow with high velocity and least weight is the one that does most work with least shock, and this blow can be given only with a light mallet and light plugger.

As to the weight of pluggers, we find it easy to give a definite rule: Make pluggers as light as possible. Have no more weight in them than is necessary to convey force of mallet to plug, and this can be done with pluggers weighing no more than 1 pwt. Even the longest pluggers with double curves should not weigh more than two to four pwts., while in all the usual forms of pluggers in common use the weight should be one to two pwts. We regard about one oz. as the proper weight for every-day mallets. Had we a sensitive tooth with extra frail walls to fill we would use a ½ oz. mallet and plugger not more than one pwt. But some ask, can you consolidate gold as densely with these light instruments as with heavy ones? Certainly not so well as on an anvil with a 5-lb. hammer and a blacksmith's muscle. But in a plug in a tooth with all the condi-

tions thereunto belonging gold can be welded into a more solid mass with an oz. mallet and a pwt. plugger than with heavy instruments; at any rate try it and see.

A word about plugger points: Take a piece of gold wire, bend it to and fro till it breaks. Break the end off a piece of hardened steel wire; with a glass examine their ends and you see a surface of fine sharp crystals and the crystals of gold and steel have quite a close resemblance. Now suppose your steel wire at broken off end is exactly the size of any Varney plugger you compare it with. The end of your Varney plugger is supposed to have a surface specially prepared and adapted to welding gold; you find it contains 10 to 20 points. Now look at end of your broken plugger, and you find, not 10 to 20 dull points with uneven but smooth surfaces between, but you find, according to strength of glass and mode of counting, from 50 to 500 sharp points and no smooth surface such as art has produced on Varney plugger.

Which of these pluggers, or rather which surface of the working ends of these pluggers, is best adapted to condensing gold, is a question to which we will all give the same answer after giving the pluggers a trial. Of course there are many shapes of pluggers on which we cannot get a crystalline point, but nine-tenths of our filling is done with pluggers adapted to crystalline ends. After any serrated plugger has been used for months the end is comparatively smooth and has an uneven smooth surface. In the crystalline point the steel is hardest when point is formed, and has this advantage—so soon as you suspect the crystals are wearing smooth or dull, break short piece off end and you have a new point.—*Pacific Gazette, Feb. 1899.*

* * *

ADVANTAGES OF THE CATAPHORIC METHOD OF DESTROYING CANCEROUS GROWTHS. G. Betton Massey claims the advantages of this method in the early stages of a cancerous growth, whether carcinoma or sarcoma, may be enumerated in part as follows. 1. While removing by immediate devitalization and subsequent separation all evident portions of the tumor as thoroughly as the knife, it does more, in following the migrated cells for some distance into the healthy flesh and there devitalizing them, thus destroying the latent roots of dissemination and recurrence. 2. The cancer is removed without cutting or loss of blood, both of which are looked on with horror by the people, hence patients will

submit to it earlier, giving better chances for actual cure before metastasis. 3. As it is now believed that cancer cells may be autografted, this method makes it impossible for the attempt at removal to be followed by an aggravation of the case by reimplantation on the cut surfaces, as occasionally happens with the knife. 4. Should some cells be missed and local recurrence appear, the application may be repeated with greater ease and effect than a cutting operation. 5. As compared with the caustic treatment, the cataphoric method is dirigible, controllable, capable of following the cells beyond the apparent limits of action, and may be finished at once under ether instead of during many days of pain. 6. Finally its value in non-operable cases should not be neglected. A daily application of 50 to 100 milliamperes of the combined zincmercuric cataphoresis, or a single powerful application under ether, will stop hemorrhage, ease pain, destroy all odor, and bring away such quantities of whitish crumbs from the mass that the patient fancies a cure will follow, until the possible advance of a metastatic growth previously planted in the liver or other inaccessible location brings about a fatal issue.—*Cin. Lancet-Clinic, Feb. 1899.*

* * *

MEASUREMENTS OF PAIN. Arthur MacDonald, in an article read before the American Psychological Association, concluded as follows: (1) In general the sensibility to pain decreases as age increases. The left temple is more sensitive than the right. This accords with former experiments, that the left hand is more sensitive to pain than the right hand. There is an increase of obtuseness to pain from ages ten to eleven; then a decrease from eleven to twelve; then an increase from twelve to thirteen. From thirteen to seventeen, while the right temple increases in obtuseness, the left temple increases in acuteness. This is in the post-pubertal period. There is a general variation, which experiments on larger numbers might modify. (2) Girls in private schools, who are generally of wealthy parents, are much more sensitive to pain than girls in the public schools. It would appear that refinement and luxuries tend to increase sensitiveness to pain. The hardihood which the great majority must experience seems advantageous. This also accords with our previous measurements, that the non-laboring classes are more sensitive to pain than the laboring classes. (3) University women are more sensitive than washerwomen, but less sensitive

than business women. There seems to be no necessary relation between intellectual development and pain sensitiveness. Obtuseness to pain seems to be due more to hardihood in early life. (4) Self-educated women who are not trained in universities are more sensitive than business women. Giving, then, the divisions in the order of their acuteness to the sense of pain, they would stand as follows: 1st, girls of the wealthy classes; 2d, self-educated women; 3d, business women; 4th, university women; 5th, washer-women. The greater sensitiveness of self-educated women as compared with university women may be due to the overtaxing of the nervous system of the former in their unequal struggle after knowledge. (5) The girls in the public schools are more sensitive at all ages than the boys. This agrees with the results of our previous measurements, that women are more sensitive to pain than men. These measurements of least disagreeableness, or of threshold of pain, are approximate measurements of the combination of nerve, feeling, and idea.—*Medical Record, April, 1899.*

* * *

NOTES ON PYORRHEA ALVEOLARIS. By O. N. Heise, M.D., D.D.S., Cincinnati. Read before Ohio State Dental Society, Dec. 1898. To such an extent has this disease become prevalent that at least 25 per cent (according to Dr. Talbot) of all people over 25 years of age are thus more or less afflicted. Twenty-five years ago it was not considered of much importance by the dentist; to-day it is giving him more trouble than caries. It is in the early recognition and treatment of this disease that we can do the most good. The term pyorrhea alveolaris, so universally used, I think has been a hindrance to the early and correct diagnosis and treatment of the trouble, as many have thereby been led to believe that unless pus is present they are not dealing with this disease. Nothing is more erroneous, in my estimation; the presence of pus is not a requisite, but an accidental complication due to an infection of the pocket with streptococci and staphylococci. Any number of cases run their course without having or showing that symptom to any degree, or in fact not at all. It does seem to me that we have looked upon it as a strictly dental disease, all the trouble emanating from the teeth (and the tartar deposits upon the roots), everything seeming to center upon the peridental membrane, leaving out of consideration the influence exerted by the varying conditions of the alveolar process

and the gum tissue surrounding it. The presence of pus, and deposits upon the teeth, are looked upon as the cause of the disease by a great many; whereas they are only secondary. In course of time, it is true, they do act as exciting agents in its further development, and as a decided hindrance to the establishment of a cure.

In order to bring out this phase of the subject, I cannot do better than to present for your consideration certain notes, comprising some of the results of Prof. Baume's investigations regarding this disease. According to him, pyorrhea alveolaris is an accidental symptom of numerous and varied pathological processes in the bone, periosteum, periodontum and gingiva, all having the same result, namely, the inducing of an atrophy or absorption of the weak and delicate alveolar lamella, modified by the peculiarities of the anatomical construction of the so-affected parts, thin paper-like septæ, lax gum tissue, weak development of the roots, and the entrance and deposition of foreign matter, such as mucus, tartar, food, and bacteria into the pockets, thereby presenting a variety of forms of this disease. Prof. Baume suggests the name of "atrophia alveolaris præcox," the wasting of the alveolar ridge and presence of pockets being the main feature of this disease, and not the flow of pus nor the presence of tartar. A premature loosening of the teeth presents itself often without any apparent cause. In the majority of cases we can trace some underlying constitutional trouble or some local lesion. Of the constitutional causes there are many; such as syphilis, diabetes, tabes, gout, rheumatoid arthritis, digestive disturbances, etc. Among poisons, we have mercury, lead, arsenic, phosphorus and others. In women the diseases of generative organs, disorders of menstruation, pregnancy and the climacteric period are very favorable to the development of gingival irritation. Many affections of the jaw without gingivitis will tend to the premature loosening of the teeth.

As a rule, however, atrophialveolaris præcox and gingivitis marginalis not only coexist, but are dependent on one another; and in the majority of cases it is the gingivitis that acts as the exciting cause. Disturbances of innervation have a special influence in bringing about a premature alveolar atrophy. In tabes dorsalis we have a rapid loosening of the teeth, due to the wasting or dissolution of the alveolar process, brought about by a sclerosis of the trigeminal nerve in its branches or its seat of origin.

Local diseases affecting the nutrient supply of the alveolar lamella and the parts adjoining tend to a change in the density and firmness of the same. Such are diseases of the pericementum, periosteum, and principally of the gingiva. Examples of the former we have in both acute and chronic pericementitis, and osteitis, where the teeth are loosened to a great extent and may remain so permanently, without the gums being involved per se, owing to the development of granulation tissue, and porosity of the dental process also, as shown by the accidental hard biting on one tooth resulting in a permanent loosening of the same, due to an injury to the periodontium.

All seem to agree that the inflammatory conditions of the gums, either of local or systemic origin, act as a primary exciting cause in the production of alveolar atrophy. The irritating, inflamed and relaxed gums will sooner or later have a deleterious effect on the adjacent parts, namely, the periodontium and periosteum, as nutrition of the parts is thereby affected, and so damaged, the influence being mostly felt in weakly developed, thin, paper-like septæ.

The pathology of these processes, no matter what the causes of the nutritional disturbances are, can be briefly summed up as follows: Owing to the inflammatory process around the alveolar border, which also influences the neighboring parts, the haversian canals communicating with the periodontium and the outer periosteum become enlarged, the hyperemia of the gums with that of the periosteum or periodontium leads to a granulation of the medullary tissue in the canals, and so causes a light form of osteoporose to be developed. The dental process which in its former condition has very small interstices, shows now much larger openings; the porosity which in its beginning is limited to the free border and slightly below, gradually extends deeper as more of the inflamed gum and its connecting periosteum are rendered unfit for supplying nutrition. The irritation also extending from the border to the periodontium, gives rise to the formation of periodontal granulations; owing to the granulations, which have principally sprung from the medullary tissue, the dental process becomes porous or rarified. The solution or wasting of the alveolar or dental process may proceed in a gradual way, as in cases of senile atrophy consuming many years, or where it occurs in association with some acute disease of the oral mucous membrane, and the gums run a rapid course, terminating in loss of the teeth in a few days or weeks.

The state of the pockets varies as that of the gums themselves. They may be inflamed, reddened and swollen. Only in the minority of cases do we observe an apparent normal condition of the gums, and in the presence of the pockets find them so closely fitting to the necks of the teeth that a retention of deleterious substances is impossible. Few cases, however, remain in this condition; in the vast majority the pockets are not only deep and wide but are patulous, so that foreign substances can enter easily and give rise to the development of bacteria and formation of pus, the presence of which led many to believe it to be the cause of the disease, and gave rise to the coining of the name *pyorrhea alveolaris* by the French. The amount of secretion is dependent on the intensity of the inflammation, size of pocket, and to a great extent on the care and cleanliness bestowed upon the teeth and mouth by the patient.

• *Pyorrhea alveolaris*, then, is only a symptom and oftentimes wanting in the premature atrophy, although nearly all authors seem to think it to be the cause, or at least an essential requisite of the disease. The following facts, however, speak against it: 1st. In pronounced loosening and rapidly progressing alveolar atrophy there may not be present a trace of *pyorrhea*. 2nd. In light forms of atrophy and slight loosening of the teeth *pyorrhea* may be largely present. 3rd. We have a gingival *pyorrhea* in children, resulting in the loosening of the teeth, but not accompanied by atrophy or absorption of the alveolar borders. If a predisposition exists, it must be in the anatomical formation of the parts, and therefore is transmissible from parent to child, namely, a weak development and deficient nutrition of alveolar process and roots of teeth.

The treatment, as you are well aware, consists in the thorough removal of all deposits. This is easily said, but not so easily done, as it requires patience, time and a delicate sense of touch in order to detect the smallest particle on the root, and while removing the deposits it is well at the same time to also remove by curetting the slightly necrotic portions of the alveolar ridge, being careful, however, not to mutilate the parts and thereby lessen the chance of recovery. After a thorough removal of the deposit and curettement of the pocket, removing the necrotic bone and granulation tissue, and washing out of the pockets by repeated syringing with hot water, apply lactic acid in a thorough manner, which application has a pronounced effect in promoting a healing of the affected parts,

the acid having the power of inducing a healthy granulation tissue to spring up, thereby ensuring a union between the tissues of the pocket and the root, i.e., by partly decalcifying the outer layers of the root, thus opening the mouths of the canaliculi and stimulating the adjacent tissue to a healthy action.

Nothing accomplishes this so well as lactic acid and phenolsulphoricini; which action is well shown in its power of promoting a healthy granulation in tubercular ulcerations in the upper air-passages, these being about the only remedies besides the application of galvanic current which will induce such ulcerations to heal. These remedies are best applied by soaking strands of twisted cotton in them, and then carefully packing into the pockets around the root, and leaving it in position for awhile, when you will find that the blood oozing out will be of a blackish color. After having pursued the above treatment, the patient is prescribed an antiseptic mouth-wash, such as borolyptol, benzolyptus, or tar water and witch hazel, with hydronaphthol and oil of cinnamon. The above to be held in the mouth not less than three or four minutes and frequently used thus the first day; after that three or four times daily in same manner, with careful toilet of the mouth.

Whenever I can induce the patient to take such care as to keep off the soft tartar which forms so readily in many of these cases, I feel confident of success, except where there has been a complete loss of the alveolar structures about the tooth, the same rising in the socket on the release of pressure; these latter being typical cases of pyorrhea alveolaris which have been allowed to advance too far, and should have been properly treated years before; yet even in some of these apparently hopeless cases a decided and often a lasting benefit will result from the proper treatment.

Besides the above local treatment it is well in the more marked cases to proscribe the too frequent use or indulgence of starchy foods, sugars and meats, advising the liberal use of water, also taking lithia salts in some form. The cutting down of starchy foods and sugar, and the too liberal use of meats and heavy alcoholic beverages, has in my observation been of decided benefit to these patients. At the same time I insist where I suspect an underlying constitutional trouble that they consult some medical practitioner regarding their case, and especially where, after a few thorough local treatments, I fail to get the proper response (or results), and

have frequently observed that my local treatment in conjunction with the general treatment instituted by the medical practitioner would be decidedly more effectual and permanent. This is well marked in the gouty and rheumatic cases, and especially in diabetes mellitus; and here I might refer in an off-hand way to the rather distinct effect this disease has on the oral mucous membrane in its first affecting the superior maxilla, also in producing a distinct and characteristic odor in the mouth rather hard to describe, but once noticed easily recognized thereafter. In fact the various symptoms produced might be looked upon as pathognomonic of the trouble, and should be carefully considered. The relationship of the oral manifestations in diabetes mellitus has been well shown by the investigations of Dr. F. Schneider, Hofzahnarzt in Erlangen, and from whose article on this subject I have quoted.

In order to show and give you some idea as to these pathological processes in the bone (alveolar process) I have brought with me some microphotographs made by my friend, Dr. M. H. Fletcher of Cincinnati. These microphotographs will, I think, also prove beyond a doubt the existence of haversian canals in the alveolar process, a fact denied by some members of our society (The Odontological Society of Cincinnati), as exceptions were taken to the statements of Dr. Fletcher and myself regarding this fact of their presence and the influence exerted and part played by them in repair and absorption of the alveolar process.—*Ohio Journal, Jan. 1899.*

FROM THE LITTLE RED SCHOOLHOUSE.—A school teacher at Port Alleghe, N. Y., the other day received the following note: "My boy tells me that ven I trink beer der overcoat vrom my stummack gets too thick. Bleeese be so kind and don't interfere in my family affairs"—*Life.*

INVENTION OF SPECTACLES.—Who first invented spectacles? These aids to vision appear to have come into use about the fourteenth century. The earliest reference to them is in the work of Bernard Gordon, professor at Montpellier, who speaks of a collyrium devised by him which allowed a person to see without spectacles. In 1360 Guy de Chanliac, in his treatise on surgery, refers to the use of lenses. The invention of spectacles is sometimes attributed to Roger Bacon, who died in 1294. Further research, however, has shown that in 1285 Savrino degli Armati, a Florentine, worked glass into the form of a lens as a help to vision. For him, therefore, may justly be claimed the honor of having invented spectacles. He died in Florence in 1317, and was buried in the church of Santa Maria Maggiore. On his stone is the following inscription: "Here lies Savrino degli Armati, inventor of spectacles. May God forgive him his sins. A.D. 1317."—*British Medical Journal.*

Letters.

AN OPEN LETTER.

To the Members of the National Dental Association: From letters received, I find that the impression prevails that I, as assistant recording secretary, am supposed to be in a measure responsible for the non-appearance of the 1898 volume of the N. D. A. Transactions.

In justice to myself, I take this method of saying that the only portions of the work for which I am individually responsible, viz., the "Minutes of the Omaha Meeting," and the "Section Organization," were completed at an early date, but by instructions from headquarters were held by me until called for by the business manager of the S. S. White Publishing Company, which was not until December 15, proofs of the same having been mailed to me January 20. All other matter pertaining to the volume was, by instructions of Dr. Crouse, Chairman Executive Committee N. D. A., transferred by me to Dr. Cushing, recording secretary. The package containing the stenographer's transcript of the discussions was not received until October 11, and was transferred unopened to Dr. Cushing, by whom all editorial work was done.

With the transfer of all documents, in October last, my responsibility ceased. Respectfully,

WM. ERNEST WALKER,
Assistant Recording Secretary, N. D. A.

[*Explanation.* No officer of the National Dental Association is to blame for this delay in publication of the transactions, as it has occurred in the office of the S. S. White Company. They are under contract to have the proceedings published within a certain time, but the business manager of the *Cosmos* has offered a reasonable explanation, so we have not pressed the matter. ED. DENTAL DIGEST.]

LETTER FROM THE SOUTH.

ATLANTA, GA., April 18, 1899.

To the Editor of the Digest,

DEAR DOCTOR:—The Mississippi Dental Association held its sixth annual session at Jackson, April 5 to 7 inclusive, and it was our pleasure and profit to meet with them. In spite of old Neptune and

Jack Frost, the session was largely attended and much enthusiasm manifested.

While yellow fever held high carnival in this immediate section last year, and cotton sold for a mere song, these impediments seemed not to have dampened the ardor or made visible inroads into the exchequers of the visitors. This was strikingly illustrated by the number applying for licenses—32. Only twenty, however, succeeded in convincing the board of their fitness to practice dentistry intelligently.

. And bye-the-bye, we were forcibly impressed with the impartial manner of the board in conducting the examinations. The applicant is not asked where he graduated, but is given a reasonable examination, after which he affixes his symbol to the paper. This has been previously selected and is placed upon an envelop which contains the full name of the examinee. As will be readily seen, he must stand squarely upon his own merits, and this method also effectually relieves the board from any suspicion of favoritism. We commend the Mississippi plan to other state boards.

In the absence of the president by reason of illness, Dr. D. R. Stubblefield delivered an able address entitled "What Are We Here For." Later in the session he read a paper on "A Study of The Nature of Amalgams." As a ready, forceful speaker, one who can invest a commonplace subject with a most lively, up-to-date interest, Dr. Stubblefield is the man. We warn Dr. Crawford to look well to his laurels.

While the number of papers read was small, the subject matter presented evinced a high order of thought and investigation. "Extraction of Teeth," by Dr. George B. Clement, was upon entirely new and suggestive grounds. By black-board diagrams he showed that certain well-known shapes of crowns indicated the relative positions of the roots and their possible osseous or non-osseous union. The Doctor also demonstrated the value of his new amputating forceps. After removing the teeth for a denture, these forceps are employed to remove a sufficient amount of the alveolar process, so as to allow the gum tissues to come together and heal by first intention, and thus lessen the time for absorption. The rationale of this method cannot be controverted, and it is destined to become the universal practice, at least among the progressive class.

An effort will be made to have the state law amended. At pres-

ent the board may consist of five practicing dentists only, without the additional qualification of graduation from a reputable dental college. Another change will be that every dentist shall register his license in each county in which he practices, instead of merely in the one where he resides. Further, that only one temporary license shall ever be granted to the same person.

The following officers were elected for the ensuing year: President, W. T. Martin; Vice-President, J. D. Wise; Secretary, A. B. Kelly; Treasurer, J. E. Suber. In electing Dr. Martin the association has greatly honored itself, for he is a fluent and strong debater as well as a good presiding officer, and shows a rare combination of student and busy practitioner.

To visit a Mississippi meeting without seeing Dr. Geo. B. Clement, is to visit Rome without seeing the pope. The Doctor is president of the examining board, and is one of the most intelligent and progressive men in the state.

JUNIUS, JR.

NEW YORK LETTER.

To the Editor of the Digest,

NEW YORK, April 22, 1899.

MR EDITOR:—While we are disposed to praise the valuable product of the journals as they appear from month to month, we cannot commend what seems to us a decided error that sometimes occurs. For instance, why give the discussion connected with a paper which has been read before some society, and not give the article, and vice versa? What is the value of the discussions on Dr. Hart's "Evolution of Decay," as they contain scarcely anything which could give the reader an intelligent idea of what the paper advocated. We were fortunate to have seen the article in 1898 and we derived much profit from it. We look forward to much value coming from Dr. Hart's writing, but we feel that he weakens his cause and detracts much from the force of his statements by allowing personalities to creep in.

A singular fact in connection with this subject is that no mention was made by the *Items of Interest* of the session that gave the profession the results of Dr. Williams' investigations, although the editor was present and took part in discussion. Has anything occurred to prevent Dr. Williams having honorable mention in that journal? Another journal made no mention of the Doctor. How nice it would be if we could all pull together and be "True Men."

In contrast with all this back-biting and jealousy, let us turn to Dr. Black's recent article. It is thoroughly scientific, well written and illustrated, and throws much light on a very interesting subject, one that is more and more to engage our intelligent attention.

We would again refer to Dr. H. T. Stewart's clinic. He claims that the action of the disorder so calcifies the cementum that all traces of the lacunae and canaliculi are destroyed, and it is necessary to remove all the *degenerated* cementum. To make the operation doubly sure, he applies hydrochloric acid and allows it to remain in the pockets for a few minutes to decalcify what he may not have removed with instruments. He used a hypodermic injection to obtund the soft tissues, since the patient showed signs of suffering, but we have found that this can be successfully controlled with chloroform, producing loss of feeling without loss of consciousness. Dr. Riggs demonstrated the value of this agent in 1874, and while we have used it ever since we have never seen any adverse results.

Dr. Riggs aimed to remove all the degenerated tissues of the hard parts, and not infrequently the amount of "timber" in his instruments was criticised and the instruments were thought to be not delicate enough. Dr. Riggs thought the instruments must have great strength because of the force needed to remove the deposits, and he always claimed that the size of instrument would not keep the skillful operator from detecting necrosed bone, as it could be told by the velvety feeling. The trouble is, the great mass of practitioners never acquire this delicate touch. Dr. Riggs always advocated leaving the wounded pocket filled with nature's own clot—the blood, and he protested against forcing escharotics into the pockets. When the wounded tissues began to feel the pain of construction however, he gave ten drops of tincture of myrrh in a glass of lukewarm water as a mouth-wash, and this afforded immediate relief. The case was then not touched for about four weeks.

The April meeting of the Odontological Society convened as usual, and among other things Dr. Gaylord of New Haven exhibited the workings of some new gold instruments. They are about thirty-two in number, which we consider too many, but Dr. Gaylord is the personification of detail, technique and good taste, so we must forgive him. These instruments have a marked advantage over the common forms, as the bulb or bill-shape is done away with,

giving a straight face and providing for an easier liberation of the gold from the point, as it is pressed into the pellet and placed in the cavity. A novel paper is promised for May—"Some of Our Mistakes in Terms of Peridental Disorders." "Phagadenic pericementitis," will come in for an intelligent attention, and we predict that we will hear nothing of "infectious" alveolitis.

The death of Dr. Dudley of Salem, Mass., will again bring to mind his very familiar figure during the 60's and 70's. He was more than ordinarily brilliant, and occupied a prominent place in all New England societies, as well as in the American.

It is a piece of news to learn that Dr. Williams has assumed the editorship of the *Weekly Dentist* of London, and we shall look with much interest for his communications. We wish that America might have had him instead of England, but perhaps they need him more over there. If England can support a dental weekly it would seem as if America might.

Another Brooklyn dentist gone, Dr. Geran. He was one of the best known practitioners in this section and many will mourn him.

Why should such an occurrence as this be possible in this congested center of dental skill? A well-known millionaire not long ago consulted his dentist regarding a sore on his tongue. No relief was obtained, and he was advised to consult another dentist, who said his difficulty was caused by friction of a broken tooth. The diagnosis came too late however, as cancer was fully developed. An operation was at once performed, involving the greater part of the tongue, but in a few weeks it had developed still further and death ensued.

Cordially,

NEW YORK.

PHOSPHORUS NECROSIS due apparently to the inhalation of phosphorus fumes is recorded in a recent issue of *L'Odontologie*. The patient was a man of good health, but addicted to the habit of excessive cigar-smoking, consuming about twenty a day, and using many matches to each one, as he frequently interrupted the smoking during his work. It was computed that for the last twenty years he had daily inhaled the vapor of phosphorus given off by over one hundred matches. The early symptoms were pain in the right eye, with swelling involving the whole side of the face. Suppuration supervened, and the pus obtained a free flow into the oral cavity. The patient's condition grew worse, and the maxilla was eventually removed. A few months later a fresh operation was necessary, but the patient collapsed, dying from meningitis. The patient's teeth were in a deplorable condition, so that it is possible the phosphorus acted through the medium of the teeth as the cause of the necrosis.

The Dental Digest.

PUBLISHED THE TWENTY-EIGHTH DAY OF EVERY MONTH

At 2231 Prairie Avenue, Chicago,

Where All Communications Should be Addressed.

Editorial.

NATIONAL DENTAL ASSOCIATION.

The annual meeting of the National Dental Association will convene the first Tuesday in August, at Niagara Falls, and continue in session four days. We wish to call attention to this important meeting at the present time for three reasons: First, that the different state societies may send fuller delegations to represent them. According to the constitution of the new national organization, only state societies can send delegates, so each one should send a full quota of representative men. Second, that the progressive members may make every effort to be present; and third, that any important facts or interesting items may be communicated to the chairman of the respective section, and that he may be notified in time of the topics on which members wish to write, so that he can communicate with them. The sections are:

SECTION I.—Prosthetic Dentistry, Metallurgy and Chemistry. I. N. Broomell, chairman; Wm. E. Walker, secretary.

SEC. II.—Dental Education, Literature and Nomenclature. S. H. Guilford, chairman; M. F. Finley, secretary.

SEC. III.—Operative Dentistry. J. Y. Crawford, chairman; Frank Holland, secretary.

SEC. IV.—Histology and Microscopy. T. L. James, chairman; L. L. Dunbar, secretary.

SEC. V.—Materia Medica and Therapeutics. J. S. Cassidy, chairman; A. W. Harlan, secretary.

SEC. VI.—Physiology and Etiology. J. D. Patterson, chairman; L. E. Custer, secretary.

SEC. VII.—Anatomy, Pathology and Surgery. W. C. Barrett, chairman; W. F. Lewis, secretary.

SEC. VIII.—Hygiene and Prophylactic Dentistry. J. Taft, chairman; H. B. McFadden, secretary.

SEC. IX.—Orthodontia. V. H. Jackson, chairman; C. L. Goddard, secretary.

SEC. X.—Clinics. H. J. McKellops, chairman; M. B. Culver, secretary.

We hope and expect a large attendance and a profitable meeting, and every active dentist who takes an interest in society work should make it a point to be at this meeting and give it his aid, and receive the accruing benefits in return. The full arrangements will be published here later.

THIS MONTH'S ARTICLES.

In the demonstration of submarine gold Dr. Davis is reviving an old method. There is no doubt but that a perfect gold filling can be made under water, as this was proven many years ago, but just as good a filling can be made where the cavity is dry. This wet method was valuable before the era of rubber-dam, but we do not see that it possesses sufficient advantage to warrant its use at the present time. Moreover, the dam should always be used to properly prepare a cavity. We believe the pitting comes from improper manipulation or from the gold not being perfectly cohesive.

As regards the article on matrices, we quite agree with the operator as to the desirability of the matrix being held firmly, but we recommend a trial of a thin copper strip, annealed, which can be readily shaped to the tooth and easily cemented fast with oxyphosphate of zinc. The matrix is very valuable in alloy filling, as it permits of malleting the alloy to place.

Dr. Weaver's article on the tongue contains much valuable information. The question why some tongues coat and others do not, is on a par with why teeth in some mouths decay and in others do not, and why in some mouths teeth decay at certain periods of life and at other times are immune. Personally we long ago adopted the practice of scraping the tongue, both in our own case and for our patients. Dentists of all people should have sweet breaths, and suffer most when their patients do not. There will certainly be less decay of the teeth if the tongue is kept clean.

The practice of pulp extirpation with a stick of wood is almost painless if skillfully performed, and in certain cases is the wisest practice that can be pursued. The orange-wood stick should not be too large, and we would emphasize the necessity of a sharp,

quick blow. It may be of interest to our readers to know that a patent on this operation was held by the International Tooth Crown Co., but the patent was declared invalid in a suit brought by the Protective Association before the supreme court.

The watchmaker's glass is invaluable to us, and we have used one for twenty-five years and would hardly know how to get along without it. A dentist is never so sure of what he is doing as when he uses this aid, and much better operations can be accomplished.

As to the question whether pulps live after extraction and re-plantation of the tooth, we believe the author's views are correct, as we have had one or two cases where children's teeth were accidentally knocked out and immediately replanted, and years after the pulps were apparently alive and healthy.

SOCIETY ORGANIZATIONS OF THE DENTAL PROFESSION.

We are made familiar from time to time by the annual addresses of various society presidents, of how the first dental society was formed many years ago, which period marked the beginning of the great advancement, and how societies have gone on increasing until they are now counted by the score. It is not an exaggeration to say that there are upwards of one hundred different dental societies in the United States, and yet a reasonably accurate estimate of the number of individual members belonging to all the different societies we find is less than one-fifth of the members of the profession practicing dentistry in the United States. This, then, does not present a very encouraging outlook from a scientific point of view, and demonstrates the fact that it is easier to organize societies than to secure the attendance at these societies of the dentists.

Anyone who has seen the benefits derived from associated effort in the dental profession can hardly understand why a much larger number do not enter into this work. There are numerous advantages to be gained from well organized dental societies, and not the least among them is the benefit of social intercourse. If in every community where there are six or more dentists they would have social gatherings, it would be a source of much improvement and would increase the harmony and goodfellowship, which are unfortunately much lacking in our ranks. The chief mission, however, should be to give to each other the benefit of work previously thought out,

but it must not be expected that every member will bring original work and fresh information. From a missionary point of view, new members are solicited and admitted with a view of benefiting them, and in this way improving the general standing and increasing the average intelligence of our profession, which these society gatherings certainly accomplish. And when we consider the great mass who never commingle with the profession at all, a very serious problem is presented, namely, how this four-fifths of the dental profession are to be brought up to the average standing; for if we are to rank as one of the learned professions this part of the problem must not be lost sight of.

Are our present societies doing the best work that can be done, and are they improving from year to year as they should? We think a careful examination of the proceedings from year to year must yield a negative answer. It has seemed to us that the individuals composing those organizations look upon this work as a matter of course, and do not give it the serious effort necessary to make it a great success. Men accept positions on a program to furnish information, and the paper when read shows that but very little thought or care has been bestowed upon it, and thus the time is wasted and not much thought is encouraged from others, and the discussions show the same lack of earnestness. In other words, it would seem as if the scientific consideration is too generally lost sight of.

One criticism which cannot be controverted is, that too many of our ablest men, after taking part for a time, grow weary and absent themselves from the monthly and annual gatherings; apparently because when they have received about all the honor and glory that their efforts can give them, they lose all further interest in this work, thus laying themselves liable to the charge of selfishness.

This leads us to the consideration of a radical change in the plans of our organization, namely, to do away with all honorary offices, and thus direct the energies of our ablest men, which now are used to secure the honors for themselves or their friends, to the scientific work. We are confident that to eliminate all routine work from our regular sessions would be a great improvement, and a good council could decide all miscellaneous business matters better than could the society.

The selection of a presiding officer by this council would result in

a much more uniformly good meeting. The first consideration in choosing the person who is to conduct the sessions should be the ability to govern, which only a few possess; and next, he should be sufficiently well read that he may be able to follow the subject under discussion and know when speakers are talking to the point, and thus be able to shut out a great mass of irrelevant talk which now consumes so much time, and is neither entertaining nor instructive. When such an individual is found he should be made the permanent presiding officer, or rather, as there are so few members of the dental profession who have the necessary ability, the presiding officer should be chosen from that few. At present, however, the office being an honorary one, the selection is due largely to one of two things; either an effort on the part of the society to show recognition of some valuable work, or else the pipe-layers and individuals who attend societies for no other purpose than to manage what is termed the politics, select some of their friends. In either case the selection is made without any reference to fitness for the duties, and so very often entire meetings are almost without value, because the chairman could not conduct the meeting properly. The adoption of this radical change that we suggest would certainly remedy this difficulty, and we believe would direct the interest to greater effort in scientific work.

Some societies have adopted part of the change that we suggest—the taking out of the society the miscellaneous business, and this change has invariably worked to advantage; but we would go further and adopt a more radical change, namely, the abolition of all honorary offices. The secretary, whose duties are arduous, is usually a paid officer, and should be permanently maintained, and likewise to a less extent the treasurer.

In presenting these views we do so because we are certain that a radical change would be beneficial, and with a hope of arousing thought and discussion in the numerous society meetings which are being held at this time.

ALUMNI ASSOCIATION NEW YORK COLLEGE OF DENTISTRY.—The sixteenth annual dinner of this organization was held April 15, 1899. It was well attended and successful in every way, and after a very enjoyable banquet the following toasts were made: Address by the President, Arthur L. Swift. Our College, J. Bethume Stein. Our Flag, B. F. Luckey. Past, Present and Future of our Association, W. D. Tenison. Alma Mater, Zachary T. Sailer. Address by Faneuil D. Weisse. Address by Chas. H. Simerson.

Notices.

NEBRASKA STATE DENTAL SOCIETY.

The twenty-second annual meeting of the Nebraska State Dental Society will be held at York, Neb., May 16-19, 1899. The profession in this and neighboring states are cordially invited to be present.

B. F. FISHER, Sec'y, Omaha.

KENTUCKY STATE DENTAL ASSOCIATION.

The Kentucky State Dental Association will hold its twenty-ninth annual meeting at Mammoth Cave, Ky., May 16-18, 1899. A cordial invitation is extended to the members of the profession to be present. For information address

J. H. BALDWIN, Sec'y, 307 W. Broadway, Louisville, Ky.

ILLINOIS STATE BOARD OF DENTAL EXAMINERS.

The next regular meeting of the Illinois Board of Dental Examiners will be held May 13, 1899, at the Chicago Business College, 67 Wabash avenue. Those desiring to take the examination should notify the secretary before the date of meeting.

J. H. SMYER, Sec'y, 70 State street, Chicago.

TEXAS STATE DENTAL ASSOCIATION.

The nineteenth annual session of the Texas Association will be held at Waco, Texas, May 16-18, 1899. The following round trip rates have been secured: From points seventy-five miles or under, one and one-third fares. Points seventy-five to one hundred miles distant, \$3.00. Points over one hundred miles, half rate. The profession is cordially invited to be present.

J. G. FIFE, Sec'y, Dallas.

CHICAGO DENTAL SOCIETY.

The following officers were elected at the April meeting: President, Garrett Newkirk; First Vice-President, Geo. W. Cook; Second Vice-President, B. D. Wikoff; Recording Secretary, Elgin MaWhinney; Corresponding Secretary, C. S. Bigelow; Treasurer, A. B. Clark; Librarian, C. J. Merriman; Board of Directors: E. Noyes, J. N. Crouse, J. G. Reid; Board of Censors: A. W. Harlan, Chairman, W. V-B. Ames, C. N. Johnson; Committee on Exhibits: J. E. Nyman, Chairman, H. A. Gunther, A. F. James.

LATEST DENTAL PATENTS.

32,654. Antiseptic in powdered form, Gustav A. Candler, Chicago.

32,702. Preparations for the mouth and teeth, Woodman, Davis & Co., Boston.

32,703. Soap dentifrice, and hair preparations, Comfort Powder Company, Hartford, Conn.

620,395. Vaporizer, Harley M. Dunlap, Battle Creek, Mich.

- 621,154. Dental engine, Frederick F. Scholl, assignor to J. Hood & Co., Boston.
- 621,565. Forceps, Malcolm L. Harris, Chicago.
- 621,873. Dental nerve broach, Wilhelm Vajnam, Buda-Pesth, Austria Hungary.
- 621,987. Dental disk holder, George E. Zinn, Chicago.
- 622,063. Mold for hand method of making tooth crowns, Clyde S. Payne, assignor to C. E. Payne, New York.
- 622,467. Dental engine, Horace D. Hermany, Mahanoy City, Pa.
- 622,670. Tooth crown, Willis H. Dwight, Lemars, Iowa.
- 622,713. Antiseptic composition, Claude A. Rosell, New York
- 622,923. Method of and apparatus for administering therapeutic electricity, Wm. P. Horton, Jr., assignor to Horton Electric Obtunding Company, Cleveland,
- 622,948. Rotary tooth-brush, Mary P. Gill, Louisville, Ky.
- 623,026. Dental chair, Adam J. May, assignor to F. Ritter, Rochester.

NATIONAL DENTAL ASSOCIATION. COMMITTEE ON HISTORY.

At the first meeting of the association a committee was appointed to report a measure looking to the preparation of a full history of the dental profession. This committee will make a report at the meeting next August, and the character of the report will depend somewhat on the interest taken in this important subject by the members of this association and the profession generally.

All must admit the necessity for a full, carefully prepared and authoritative history of dentistry. The time (as the century closes) is most propitious and the longer it is delayed the more difficult it will be to secure a reliable result.

The committee will be greatly helped in making its report by any interest you may take in this matter, and would be glad to have your replies to these queries, together with any advice, suggestions or objections you may be pleased to give.

Will you please name any books, pamphlets, manuscript reports, in fact any matters of interest you may possess, which at the proper time might be available for the history? Will you please give the names and addresses of any dentists in your vicinity who have written on the subject or are interested in dental history? Should the proposed work in your opinion be confined to a history of the profession in America, or should it be of dentistry from the earliest times all over the world? As it is necessary for us to report on the probable financial success of the idea, would you be willing to subscribe at the proper time for a satisfactory history of the dental profession?

CHARLES McMANUS, Chairman, 80 Pratt street, Hartford, Conn.

AMERICAN DENTAL SOCIETY OF EUROPE.

Upon motion, the following report of the committee appointed by the American Dental Society of Europe in London, August, 1898, was carried unanimously:

Whereas, a Special Executive Session of the American Dental Society of Europe has been called at Brussels, April 1, 1899, for the purpose of considering what further action shall be taken towards improving the standing of the graduates from American dental colleges practicing in Europe, and to receive and act upon the report of the committee appointed in London at the last annual meeting,

Whereas, a majority of said committee and a large number of the active members of the society being present from all parts of Europe, thereby showing their great interest in the subject under consideration,

Resolved, "That the American Dental Society of Europe views with pleasure and approval the action of the National Association of Dental Faculties, U.S.A., in appointing a 'Foreign Relations Committee,' and hopes that this committee will be indefinitely continued, and empowered to take such action as shall appear to its members to be for the best interests of the profession."

Resolved, "That the society expresses its thanks to the National Association of Dental Faculties for its resolution and action in accepting the report of its 'Foreign Relations Committee,' and continuing it at Omaha, August, 1898, and creating advisory boards in all European countries, with the view that the certificates of foreign students proposing to enter American dental colleges be submitted to the advisory boards of the respective countries of which they are citizens or residents."

Resolved, "That it is the opinion of this society that foreign students should possess such a knowledge of the English language as would enable them to thoroughly comprehend the lectures and teachings which they will be called upon to pass examinations in, and that no foreign student should be allowed to pass any examination through the medium of an interpreter."

Resolved, "That the American Dental Society of Europe heartily approves of the wisdom of requiring a preliminary examination of students from European countries, or would suggest as preferable that it be required of each foreign student that he present official certificates of having passed the preliminary requirements for matriculation as a dental student in his own country, and that these certificates be endorsed by the advisory board of said country, and that they also be subject to the rules of the National Association of Dental Faculties."

Resolved, "That this society approves of the resolutions of the 'Foreign Relations Committee,' of the National Association of Dental Faculties, to appoint advisory board consisting of 'not more than three members,' and it is hoped, for the accomplishment of the best results, that the number of members on each board be raised to three at the earliest practical moment, and this society is unanimously and strongly of the opinion that three are necessary to constitute an influential board of this nature; and that where practicable at least one member should be a native of the country."

Resolved, "That the American Dental Society of Europe tender a sincere vote of thanks to the National Association of Dental Faculties, and to the 'Foreign Relations Committee,' and especially to their energetic chairman, Dr. W. C. Barrett, for the active and hearty manner in which they have

met the appeals of their confreres in Europe, who for so long have urged the importance of the consideration this subject is now receiving at their hands."

Resolved, "That a Committee upon Dental Education be a permanent committee of the society, and that said committee consist of all the members of the society who are members of the advisory board of the 'Foreign Relations Committee' of the National Association of Dental Faculties."

(Signed)

L. C. BRYAN, *Chairman*.

W. E. ROYCE.

W. MITCHELL.

It was further moved and carried that the report of the committee be sent to the various dental journals for publication at the earliest possible date.

AMERICAN MEDICAL ASSOCIATION. SECTION ON STOMATOLOGY.

The next meeting of the American Medical Association will be held in Columbus, O., June 6, 1899. It is believed that this year the numbers upon the program of the Section of Stomatology will each be of unusual interest, as it is the intention to have chiefly, if not entirely, the result of original research and experimentation given in these papers. The manipulation and technique of operation, together with processes relating to mechanical dentistry, are not accepted at these meetings; since both medical and dental professions are associated and commonly represented in the attendance, subjects of interest to both are most acceptable; moreover, there are many association meetings where such matters can more advantageously be discussed.

There has been some little inquiry concerning the manner of conducting the meetings of this section, and also some confusion with regard to eligibility to membership. It is therefore deemed advisable that notices to the journals should this year cover such information, in addition to the usual publication of the program. These have always been selected by the secretary with the greatest care. There is no business to transact in the section; everything of that nature is referred to the business committee (composed of the last three retired chairmen of sections), which meets every afternoon at 5 p. m., to consider the welfare of the whole association and of each section. These matters are discussed, and if favorably considered are reported to the general meeting. This method relieves the sections of considerable routine and unnecessary work, and also gives more time for the transaction of the regular business.

On Tuesday afternoon a committee of three is appointed in each section to nominate officers for the following year. The committee reports on Wednesday, at which meeting the candidates are elected. Since the offices of chairman and secretary carry no great honor, there is very little desire on the part of the members for the positions, hence politics never mar the session.

Dentists are admitted in the same manner as physicians. Dentists holding the D.D.S. degree, upon presenting credentials from their state or local society, and the payment of \$5.00, can become members of the association, which also entitles them to the journal of the association for the ensuing year.

The following list is the preliminary program of the meeting to date:

Chairman's Address, G. V. I. Brown, Milwaukee; Cocain and Eucaïn, Their Relative Toxicity, A. H. Peck, Chicago; Epithelial Structures in the Peridental Membrane, F. B. Noyes, Chicago; Infectious Ulcerative Stomatitis, John S. Marshall, Chicago; Oral Surgical Operations (with illustrations showing remarkable results), G. V. I. Brown, Milwaukee; Some Points on the Etiology, Pathology and Treatment of Persistent Pyorrhea Alveolaris, G. T. Carpenter, Chicago; Interstitial Gingivitis (so-called Pyorrhea Alveolaris), giving the result of original work, with large photographic illustrations showing the progress of the disease from the beginning to the exfoliation of the teeth, Eugene S. Talbot, Chicago; Syphilitic Infection from Dental Instruments, with Cases, W. L. Baum, Chicago; Neuralgias due to Progressive Periosteal Necrosis, M. H. Fletcher, Cincinnati; Therapeutics of Inflammatory Conditions, W. B. Hill, Milwaukee.

It has so happened that the secretary of the section of stomatology has been almost continually in office for eighteen years, and the practice of having a permanent secretary has undoubtedly proven to be of great value, since his familiarity with methods of conducting the work, as well as his knowledge of suitable talent to be selected within reasonable distance from the particular part of the country in which the association may meet, is a matter of the highest value. A knowledge also of the papers which have been read in the past is of extreme benefit to any association in the selection of subjects for a program. A large attendance has never been deemed a matter of high importance, and although the meetings are well attended in comparison with those of other sections of the association, the character of those in attendance and their interest in the subjects in hand have always been the factors upon which dependence has been based for successful meetings. All are cordially invited to attend.

G. V. I. BROWN, Chairman.

ILLINOIS STATE DENTAL SOCIETY.

It was decided one year ago by vote of the society that the thirty-fifth annual meeting should be held in Chicago, and that it should consist largely of clinics. It will be seen that the committee has provided an excellent list, and we hope every dentist who can possibly do so will attend.

The sessions will last three days, May 9-11. The first day's sessions, Tuesday, will be held at the Palmer House; clinics and sessions for papers, etc., the second day at the Northwestern University Dental School, Madison and Franklin streets; and the clinics and readings of papers the third day, at the Chicago College of Dental Surgery, Wood and Harrison streets. The work will be completed Thursday evening, and on Friday the local dentists will be in their offices to receive and entertain any visiting practitioners who may call upon them.

The Palmer House will be headquarters for visiting members and guests.

The Western Passenger Association has granted a rate of one and one-third fare on the certificate plan from all points in the state and from St. Louis. Those traveling over more than one railroad should take a certificate from each.

Those desiring space for exhibits should communicate with Dr. H. J. Goslee, Wood and Harrison streets, or with Dr. J. H. Prothero, 146 Franklin street, as these two gentlemen constitute the committee of local arrangements.

CHAS. P. PRUYN, Chicago, President.

A. H. PECK, Chicago, Secretary.

The program of papers is as follows: President's Annual Address, Chicago; Use of Noncohesive Gold, G. A. McMillan, Alton, Ill.; Modern Manipulative Methods in Crown and Bridge Work, H. J. Goslee, Chicago; Bacteriological Investigations of Pulp Gangrene, G. W. Cook, Chicago; Photomicrographic Exhibit, Illustrating the Structure of Enamel with Reference to Cleavage on the Lines and Angles of Cavity Margins, F. B. Noyes, Chicago; Report on Dental Science and Literature, A. W. Harlan, Committee, Chicago; Report on Dental Art and Invention, J. E. Keefe, Committee, Chicago.

D. M. CATTELL, Chairman Executive Committee, Chicago.

LIST OF CLINICS.

1. J. E. Aigley, Farmington, Ill. Gold Filling.
2. Edward H. Angle, St. Louis. Principles in the Diagnosis of Malocclusion and Adjustment of Regulating Appliances.
3. J. B. Brown, Bloomington, Ill. Bleaching Teeth.
4. H. B. Bull, Fairbury, Ill. Table Clinic, Making Gold Cusps and Backing for Porcelain Facings.
5. F. E. Berry, Milwaukee. Electric Appliances.
6. J. Campbell, Bloomington, Ill. Extracting Live Pulp without Pain.
7. A. W. Chenoweth, Atlanta, Ill. Gold Filling, Hand Mallet and Pluggers (Davidson patent as a starter).
8. J. W. Cormany, Mt. Carroll, Ill. Gold Filling in the Anterior Approximal Surface of a Superior Central Incisor, using the Bonwill Mechanical Mallet No. 2.
9. J. T. Cummins, Metropolis, Ill. Gold Filling in Anterior Teeth, with Automatic Mallet.
10. Charles C. Chittenden, Madison, Wis. Gold Filling in Bicuspid, Proximal Compound Cavity, with Combination Soft and Cohesive Foil, using Matrix, in the mouth of Dr. A. H. Peck.
11. Levitt E. Custer, Dayton, O.
12. Junius E. Cravens, Indianapolis. Cases of Pyorrhea Alveolaris Surgically Treated.
13. K. B. Davis, Springfield, Ill. A New Style of Bridgework.
14. C. P. Dorn, Naperville, Ill. Setting Logan Crown, Bicuspid, with Gold Band.
15. S. Finley Duncan, Joliet, Ill. Clinic promised.
16. H. B. Farmer, East St. Louis, Ill. Will demonstrate Dr. J. H. Blair's method of treating and filling putrescent pulp cavity with iodoform vapor.
17. E. F. Hazell, Springfield, Ill.
18. Austin F. James, Oak Park, Ill. Immediate Regulation.
19. F. S. Rimmer, Minneapolis, Minn. Contour Gold Filling, Bicuspid. Will start filling with non-cohesive cylinders and finish with cohesive gold, using the saw to establish interproximate space.
20. S. W. Lakin, Eureka, Ill. The Restoration of the Lower Third of a Superior Incisor or Cuspid, using the Screw System and Crystal Gold, Packing Gold with Non-Serrated Instruments.
21. F. H. McIntosh, Bloomington, Ill. Gold filling in the distal surface of bicuspid or molar, or a cervical filling, using Hatch clamp.
22. Grafton Munroe, Springfield, Ill. Table Clinic on some suggestions pertaining to the uses of Hydronaphthol.
23. Geo. S. Monson, St. Paul. Gold Filling in Bicuspid.
24. Edmund Noyes, Chicago. Will make

a platinized gold corner on left central incisor, Dr. C. A. Kitchen of Rockford, patient. 25. R. M. Pearce, Rock Island, Ill. Gold Filling, Hand Mallet. 26. F. A. Roe, Burlington, Ia. A Short and Accurate Way of Making a Gold Crown. 27. R. G. Richter, Milwaukee. Rope Tin Filling. 28. G. D. Sitherwood, Bloomington, Ill. Union of Porcelain in Gold in Artistic Bridgework. Also, The Value of Trichloroacetic acid when used as an Escharotic in Preparing Roots for the Setting of Crowns. 29. J. W. Shedd, Pontiac, Ill. Gold filling, proximo-occlusal cavity in a bicuspid or molar, using Mason mallet. 30. J. M. Sprinkle, Nokomis, Ill. Oral Surgery, and treating and filling of carious teeth, including various conditions of pulp canals; action of medicines. 31. William W. Shryock, Ft. Wayne, Ind. Removable facing for crown and bridgework, and applying the countersunk nut in orthodontia. 32. I. C. St. John, Minneapolis. A Restoration Filling in an Incisor, with Original Cavity Preparation. 33. C. H. West, Farina, Ill. Will place a proximal amalgam filling with step-retaining extension, posterior cavity of superior first molar, using the Booth matrix holder. 34. Henry L. Whipple, Quincy, Ill. Will construct a Downie Crown, using an Electric Furnace. 35. J. O. Widenham, Jacksonville, Ill. Will demonstrate how a rubber plate can be repaired with solder, quickly, neatly and substantially. 36. Eugene R. Warner, Denver, Colo. A method of anesthetizing pulps for removal at one sitting. 37. E. K. Wedelstaedt, St. Paul. Gold filling, mesio-occlusal cavity in an upper bicuspid, demonstrating Dr. G. V. Black's method of preparing cavity. Gold will be packed according to the principles and method illustrated and advanced on page 537, 1897 Cosmos. 38. W. J. Younger, Chicago. Will clinic his specialties. 39. T. W. Brophy, Chicago. Oral Surgery, with a Number of Illustrations. 40. Geo. T. Carpenter, Chicago. Will demonstrate his method of gum restoration, and will show patients for whom he has developed gum tissue. 41. Calvin S. Case, Chicago. Will show cases in fracture, orthodontia, and artificial palates during process of correction. 42. B. J. Cigrand, Chicago. His method of root-canal filling (by model or clinic). 43. J. N. Crouse, Chicago. The use of copper matrix set with oxyphosphate. 44. J. Austin Dunn, Chicago. Large approximo-occlusal amalgam filling, with perfect contact, without previous separation, using a hand matrix. 45. D. M. Gallie, Chicago. Compound proximal molar or bicuspid, crystal gold, and finish with No. 30 Foil. 46. T. L. Gilmer, Chicago. Oral Surgery Clinic. 47. Robert Good, Chicago. Treatment of Pyorrhea Alveolaris. 48. H. J. Goslee, Chicago. Will demonstrate his method of carving cusps for crown and bridgework. 49. W. F. Green, Evanston. Will make a porcelain bridge from start to finish. 50. H. Alfred Gunther, Chicago. A Secure and Expeditious Method of Starting a Filling by the use of Crystalloid Gold. 51. A. W. Harlan, Chicago. Pyorrhea Alveolaris. 52. J. E. Hinkins, Chicago. Removal of Deposits, using a new set of Dr. Chase's Instruments. 53. J. E. Keefe, Chicago. Replantation for the Cure of Pyorrhea. 54. Garrett Newkirk, Chicago. Management of Children, with special reference to the Deciduous Teeth. 55. John E. Nyman, Chicago. A Porcelain Bridge from start to finish. 56. E. A. Royce, Chicago. Gold filling, using Royce plugger points

and rapid mallet. 57. L. K. Stewart, Chicago. Seamless Crown. 58. G. A. Thomas, Chicago. Clinic in Porcelain, etc. 59. J. W. Wassall, Chicago. Pyorrhea. 60. J. S. Bridges, Chicago. Will demonstrate Open-faced Crown. 61. Hebert, Chicago. Will demonstrate his method of making seamless gold crowns. 62. Edmonds, Chicago. Will give something in Porcelain work. 63. E. J. Perry, Chicago. Will prepare a root and make a porcelain crown. 64. C. E. Bentley, Chicago. Will amputate the apex of a root for the cure of chronic alveolar abscess. 65. Wm. E. Harper, Chicago. Table Clinic. (1) Amalgam Fillings, application of the matrix, instruments and instrumentation. (2) Transverse sections of filled cavities, showing anchorage. (3) Prepared cavities, and the instruments used. 66. W. H. Taggart, Chicago. Will clinic something. 67. B. J. Oigrand. Logan crown with intradental band; using chloro-percha and oxyphosphate as retainers. 68. R. H. Kimball, Chicago. Gold Filling. 69. A. M. Markle, Chicago. Exhibition of Cases of Orthodontia, showing the benefit of skiagraphs in diagnosis. 70. Prof. Fuchs. Will demonstrate X-Ray Photography and its application in Dentistry. 71. J. H. Woolley, Chicago. Combination of Non-Cohesive Gold and Oxyphosphate as a Temporary Filling.

L. W. SKIDMORE, Supervisor Clinics.

Assistants, F. B. NOYES, E. R. CARPENTER.

News Summary.

SOLVENT FOR RUBBER.—Carbon bisulfid is the best.

J. C. BOSTICK, a dentist of Union City, Tenn., died April 13, 1899.

SEASONABLE.—Stick to your winter flannels until they reciprocate.

JAS. H. CARNELL, 55 years old, and a dentist of Albany, N. Y., died April 6, 1899.

A PAINLESS DENTIST has been sued because the work did not turn out so painless as advertised.

R. A. KNEELAND, a dentist of Benton Harbor, Mich., died April 13, 1899, at the age of 50 years.

OHIO ACTIVE—A dentist has been arrested in Cleveland for practicing dentistry without a license.

S. J. KENNEDY, a New York dentist accused of a murder on March 31, was sentenced to die May 22.

J. P. GERAN, a prominent dentist of Brooklyn, died March 30 from Bright's disease, at the age of 67.

JESSE GAGNON, aged 33, a dentist of Youngstown, Ohio, died suddenly April 17, 1899, from heart failure.

DARIUS WHEELER, 65 years old, formerly a dentist at Sag Harbor, N. Y., died of heart disease April 10, 1899.

SIGN OF RICKETS.—If there are no teeth at the age of twelve months the infant is probably rachitic.—*Smith*.

PHILADELPHIA is considering the advisability of bringing suit against itself for poisoning its citizens with typhoid-germ water.—*Med. Record.*

BALTIMORE COLLEGE OF DENTAL SURGERY.—The annual commencement of this school was held March 31, 1899, and sixty-two seniors were graduated.

DR. J. H. PROTHERO, of the Northwestern University Dental School, has taken a trip to Mexico on business for the Mexican Plantation Association.

WOMEN IN GERMANY.—A movement is on foot in Germany to admit women to the study of dentistry, medicine and pharmacy, and it is likely to prove successful.

THE DENTISTS OF GRAND RAPIDS have won their suit against the illegal practitioners, and the dentists throughout Michigan will now make renewed efforts to enforce the law.

W. M. BARTLETT, of the Missouri State Board, has secured warrants against several dentists who are practicing dentistry without a license, and will push the suits against them.

MARION-SIMS COLLEGE OF MEDICINE, DENTAL DEPARTMENT.—The annual commencement of this school was held at St. Louis, April 19, 1899, and twenty-six seniors received diplomas.

ERNEST S. JOHNSTONE, a traveling dentist who used cocaine and pulled teeth with his fingers, was convicted of practicing dentistry illegally, and was fined \$60 and costs at Norwich, Conn., March 27.

PACIFIC COAST DENTAL CONGRESS TRANSACTIONS of the 1898 Session have been received, and present a very creditable appearance. The publication committee is Drs. W. A. Knowles, J. D. Hodgen and R. W. Meek.

MEDICAL PRACTICE ACT.—Gov. Tanner has signed this act, although all the better class of physicians were bitterly opposed to it because it took issue with the prevailing opinion as to the legitimate practice of medicine.

S. P. GRANT, a dentist of Danville, Ky., has recently invented a very ingenious paper bag. The special feature is a string fastened with an eyelet in one side of the bag, which is wrapped around the neck of the bag when full and fastens it tightly.

NEW YORK STATE THIRD AND FOURTH DISTRICT SOCIETIES met April 13, 1899, and the following officers were elected by the Third District Society: President, James W. Hine; Vice-President, C. H. Bird; Secretary, M. J. Barrett; Treasurer, J. W. Canaday.

JEREMIAH HAYHURST, one of the oldest dentists of Lambertville, N. J., died March 22, 1899, of heart failure, at the age of 80 years. He was the first chairman of the New Jersey Board of Examiners, and the first president of the New Jersey State Dental Society.

SENATOR CAMPBELL'S BILL regulating the practice of dentistry in the State of Illinois was passed March 28, 1899, yeas 27, nays 2. The bill amends the present law by changing the mode of enforcing it. Under its provision prosecution may be conducted in the name of the people instead of by indictment.

OUT OF THE MOUTHS OF BABES.—“Oh, my daughter!” (to a little girl of six). “You should not be frightened and run from the goat. Don’t you know you are a Christian scientist?” “But, mamma” (excitedly), “the billy goat doesn’t know it.”—*Current Literature*.

OHIO COLLEGE OF DENTAL SURGERY.—The commencement exercises of this school were held April 12, 1899, and on the evening previous the faculty tendered a banquet to the graduating class. One hundred students and alumni were present, and a delightful evening was had.

A CORRECTION.—On page 216 of our March issue we stated that the authorities were after the Kansas City Dental College. We took this report from the daily press and presumed it to be correct, but now learn that it should have read The Kansas City College of Dental Surgery.

SOUTHERN MINNESOTA DENTAL ASSOCIATION at their annual meeting at Mankato April 14, elected the following officers: President, W. A. Demo; Vice-President, R. A. Munro; Treasurer, M. B. Wood; Secretary, A. C. Rosenquist; Chairman of Program Committee, L. P. Leonard.

OUR NEEDS.—An Arkansas editor, reading that a young lady in New York kneads bread with her gloves on, says: “We need bread with our boots on; we need bread with our coat on; and if our subscribers in arrears don’t pay up soon we shall need bread without anything on.” And so say we all.

BIRMINGHAM DENTAL COLLEGE.—The commencement exercises of this school were held March 31, 1899, at Birmingham, Ala. The address to the graduating class was delivered by Hon. Joseph H. Merrill of Thomasville, Ga., and the degrees were conferred upon the eight graduates by Dr. T. M. Allen, dean of the college.

MARYLAND LAW IN QUESTION.—An unregistered dentist who has been indicted by the state dental board will endeavor to prove that the law is unconstitutional, because he says it empowers the board to pass upon the qualifications of those who desire to practice dentistry, yet does not state what the qualifications shall be.

THE FIFTH DISTRICT DENTAL SOCIETY OF NEW YORK at its thirty-first annual meeting, April 11, 1899, elected the following officers: President, G. B. Beach; Vice-President, W. F. Tremain; Secretary, C. H. Barnes; Correspondent, S. Slocum; Treasurer, I. C. Curtis; Librarian, T. R. Adams; Censors, F. D. Nellis, L. B. Palmer, A. Retter.

CINCINNATI ACADEMY OF MEDICINE at its regular meeting March 27, 1899, elected the following officers: President, J. E. Bruchie; Vice-President, W. S. Locke; Secretary, E. L. Schell; Treasurer, W. T. McLean; Board of Directors, C. H. Rosenthal, C. S. Haver, A. A. Kumler, S. J. Rauh. After the regular business meeting an enjoyable banquet was held.

SENATOR CHAPMAN (ILL.) introduced a bill, April 15, 1899, providing that the attorney-general may file a bill in chancery against any corporation authorized to confer degrees or other certificates of qualification in the science of medicine, pharmacy or dentistry, which conducts a fraudulent business, or abuses, misuses or violates the terms of its charter.

THE VALLEY DENTAL SOCIETY (MASS.), at its recent meeting elected the following officers: D. H. Allis, President; A. J. Flanagan, Secretary; C. S. Hurlburt, Treasurer; P. W. Soule, W. H. Spencer, D. H. Allis, Executive Committee; W. O. Barrett, Councillor. A strong effort will be made to suppress the illegal practice of dentistry, for the society is greatly pleased over the success attained thus far.

SYCOSIS OF THE UPPER LIP.—There is here usually incessant reinfection from the nose, augmented by friction of the handkerchief. It is recommended to use as a wash for the nose a decoction of cinchona instead of using a handkerchief. Upon the lip is applied constantly an ointment, containing zinc oxid, sulfur and possibly ichthyol, which is removed only when the washing is done. Epilation is rarely necessary.—*Unna, La Sem. Med.*, No. 280.

CATS AND THE DISSEMINATION OF DISEASE.—That the family cat may be the medium of the dissemination of diphtheria has been known for some time, but renewed attention has been drawn to the fact by the Medical Officer of Health for Haddington, who reports two cases of the kind which had recently come under his notice. Unfortunately in each case the cat had been killed and the body been disposed of before the nature of its illness could be scientifically verified. Nevertheless, the evidence was indisputable that after the illness in the cat had declared itself diphtheria broke out in the household.—*Medical Press*, 65, 390.

JAW IN LAW AND DENTISTRY.—In an address Prosecuting Attorney James A. Reed, of Missouri, said: "Now here are two professions living each by the jaw of man, yet distinguished in this: The lawyer uses his own jaw as a weapon of attack and defense; the dentist attacks the jaw of another with a weapon; and there is no defense. The dentist uses the jaw as an end; the lawyer as a means to an end. Observe, too, the interdependence of these two professions. For if the jaw is the lawyer's weapon, then the dentist who keeps this weapon in good working order becomes a particeps criminis, and this is probably the toughest thing ever said of any dentist, living or dead."

QUESTION OF PATENTS.—The point recently arose in London whether a patent expiring either in France, Germany or America must simultaneously expire in the two countries, while in England the same patent might afterwards run on to the end of the next term, notwithstanding that it had ceased to exist in the aforesaid countries. In England the duration of a patent is not affected by the expiring of a patent for the same invention in any other state. There appears, however, to be no difference in this respect between the laws of England and those which have been in force in Germany for many years past, and in the United States since January 1, 1898. According to the old French law, the duration of a patent in France could not exceed that of a patent for the same invention obtained abroad, but by the protocol of the International Convention, signed at Brussels, December, 1897, the several states of the union, including France, agreed that patents in those states should be independent of the patents for the same invention obtained in other states.

SIGNS OF INHERITED SYPHILIS.—By R. H. Dawbarn, M.D., New York. The temporary teeth are cut very early, of bad color, and liable to a crumbling decay. The upper central incisors of the milk set suffer first (Erichsen). It is curious how widespread, even to-day, is the belief that it means bad luck to have teeth at birth; and here, upon eminent authority, is a justification for the superstition. Twice in Shakespeare's play of Henry VI. is this alluded to. When King Henry taunts the hump-backed Duke of Gloucester with being born with teeth, the latter considers it sufficient cause for stabbing him to death. *Hutchinson's Teeth.*—These famous signs are found only in the permanent set, it must be remembered. The upper central incisors are again the ones mainly involved, or at least most characteristic. The notching of their lower edge, and peg shape, or screw-driver shape, are familiar to all medical men. But not all cases of syphilis, either inherited or acquired, who reach the necessary age to have second incisors, present Hutchinson's teeth. He has himself pointed out that it is found only in those who have had syphilitic stomatitis at an early age.

INDEX TO ADVERTISEMENTS.

	PAGE		PAGE
American Endoscopic Co.....	49	Howard, C. T.—Strips.....	29
American Hard Rubber Co.....	48	Harvard University—Dental Dept.....	54
Antidolor Mfg. Co.—Anesthetic.....	45	Hammond, John F.—Cement.....	32
Archer, Chas. S.—Dental Depot.....	34	Hall & Ruckel—Sozodont.....	3
Baltimore College of Dental Surgery.....	59	Hall, Wm. R. & Son—Disks.....	46
Birmingham Dental College.....	53	Harvey, G. F. Co.—Ethyl-Chlorid.....	31
Blair Fountain Spittum Co.....	41	Hampton & Co.—Dental Journal.....	32
Burnham Electric Co.—Fan Motor.....	36	Hisey Mfg. Co.—Anesthetic.....	34
Carroll, Dr. H. M.—Retainers.....	46	Indiana Dental College.....	56
Chase Com. Plate Co.—Supplies.....	42	Lambert Pharmacal Co.—Listerine.....	1
Canton Surgical and Dental Chair Co.....	45	Lowry, Dr. H. S.—Crowning Outfit.....	44
Central Dental and Chemical Co.....	29	Manhattan Dental Co.—Platinoid.....	30
Chicago Kindergarten College.....	55	Mexican Plantation Association.....	44
Chicago College of Dental Surgery.....	60-1	Mason, W. L.—Matinum.....	28
Chicago Dental Specialty Co.—Gas Outfit.....	51	Morgan-Maxfield—Disk Mandrel.....	30
Dart Publishing Co.—Ledgers.....	47	McKesson & Robbins—Vapocain, Cover page 3	
Dee, Thos. J. & Co.—Refiners.....	38	Morgan, Hastings & Co.—Gold Foil, etc.....	50
Dentacura Co.—Tooth Paste.....	2	Meyer, Dr. J. H.—Post-Graduate School.....	56
Douhet Dental Mfg. Co.—Vulcanizer.....	25	Moore, E. C. & Son—Apron.....	31
Dunn, Dr. E. H.—Fulcrum.....	45	Munn & Co.—Patents.....	26
Detroit Dental Mfg. Co.—Specialties.....	43	National Medical Exchange.....	22
Dental Protective Supply Co.—		Northwestern University Dental School.....	62
Adjustable Slip-Joint.....	10	New York College of Dentistry.....	67
Rubber-Dam.....	46	Ohio College of Dental Surgery.....	56
Discounts.....	6	Palisade Mfg. Co.—Borolyptol.....	64
Angle Attachments.....	7	Penna. College of Dental Surgery.....	63
Dental Engine.....	15	Phillips, Chas. H. Co.—Milk of Magnesia,	
Vulcanite Rubbers.....	6Cover page 2	
Fellowship Alloy.....12, 13 and colored insert	4	Pope Mfg. Co.—Columbia Bicycles.....	27
Dual-Blade Burs.....	3	Rugg, Frank E.—Nickel Plater.....	30
Teeth.....19-23 and back cover		Russell Electric Mallet Co.....	29
Fellowship Broaches.....	33	Saul, J. A.—Patents.....	29
Lithos Cement.....	14	Schering & Glatz—Eucalin.....	39
Philadelphia Branch.....	18	Scivaleno Chemical Co.—Antidote.....	27
Inlay Enamel.....	16	Snyder, Dr. F. L.—Disk.....	32
Repair Work.....	17	Spooner, Dr. F. B.—Cotton Trap.....	37
"No. 1" Handpiece.....	6-9	Twist, Dr. J. F.—Crowning Outfit.....	11
Fairchild Chemical Laboratory—Sanitol.....	39	Vanderbilt University—Dental Dept.....	54
Frink & Young—Crowns.....	53	Willson, H. B.—Patents.....	26
Amalgam and Cutting-Fluid.....	25	Webster Mfg. Co.—Blow Pipe.....	40
German-American Dental College.....	58	Weld, G. W.—Chemico-Metallic Method.....	42
Gesswein, F. W. Co.—Ruby Crystal.....	24	Weller Dental Supply Co.....	52
Gilbert, S. E.—Specialties.....	38	Wilcox, A. A. Laboratory—Cement.....	26
Goodrich, B. F. Co.—Rubber.....	42	Wenker, Dr. R. J.—Ledger.....	24
Goldsmith Bros.—Refiners.....	37	Western Reserve Univ.—Col. of Dentistry.....	54

The particles of food

which find lodgement in the interstices of the teeth and in the tooth structure, form a most suitable pabulum and very secure habitation for bacteria; consequently, the Dental Profession has subjected to very careful test the various antiseptic and disinfectant agents known to science, with the object of ascertaining their exact inhibitory or germicidal value, and their general adaptability to the practice of dentistry. In the researches by Professor Miller, of the Royal University of Berlin, to determine the most available antiseptic for the prophylactic treatment of the oral cavity, and for the preservation of the teeth, the action of Listerine was particularly noteworthy for the rapidity with which it acted upon the fungi of the mouth, and it was clearly demonstrated to be one of the most powerful, and the safest of the available antiseptic solutions.

Listerine has proven a very useful agent in Dental Practice:

- To treat antiseptically all diseases of the oral cavity.
- To prescribe as a detergent prophylactic mouth wash.
- To cleanse and deodorize before operating.
- To wash and purify the mouth after extracting.

Dealers in drugs, everywhere, will promptly fill your prescriptions for Listerine, but in consequence of the prevailing evil—substitution—we request that an original package be ordered, thus assuring to the patient genuine Listerine.

Upon demand, we shall send you "Listerine in Dental Practice," a compilation of interesting reports descriptive of the antiseptic utility and general adaptability of Listerine to the dental art.

Lambert Pharmacal Co., Sole makers of **Listerine,** **St. Louis.**

Are There Any Dentists Financially Interested in *Dentacura*?

This question has been asked many times of late. It has undoubtedly been prompted by the unusual character of the indorsements given **Dentacura**, and probably by the fact that some concerns are trying to debauch the profession by offering certificates of their stock as inducements for its patronage.

It is astonishing how cheap some dentists hold themselves and the low estimate they have of their calling and of the character and reputation of their confreres. The sordid motive ascribed to the conscientious practitioners who have so generously and disinterestedly endorsed **Dentacura** is appalling. To cap the climax, insinuations are being made that some of the Special Committee on Oral Prophylaxis appointed by **The New Jersey State Dental Society** to investigate **Dentifrices** are financially interested in **DENTACURA**, and for this reason the report favorable to **DENTACURA** was made.

All such insinuations are base and malicious, as they are false and discreditable.

We own no dentist, and no dentist or body of dentists owns us. We never have and never shall appeal to the mercenary instincts of the profession. Every commendation of **Dentacura** has been prompted solely by a conscientious conviction of its inherent merits and based upon carefully ascertained facts.

Regarding the report made to **The New Jersey State Dental Society** by their Special Committee on Oral Prophylaxis, we would simply call attention to the following extract from an affidavit made by us.

"And deponent further says that until the said annual meeting (of the New Jersey State Dental Society) and its unanimous adoption by the said Committee, this deponent and his said company had no knowledge of the said report or its contents, or that the said Committee would report in favor of DENTACURA.

"S. PARK LATHROP."

Subscribed and sworn to this seventh day of } **WILLIAM D. KELLOGG,**
October, A. D. 1898, at Newark, N. J. } *Master in Chancery of New Jersey*

The holding of stock by dentists in any company which appeals to the profession for support must necessarily debauch their minds, vitiate their professional instincts and eventually compromise both them and the preparation in which they are interested. For this reason, no dentist or physician is, or has been, or can be financially interested in DENTACURA.

Dentacura needs no empirical praise or false prop. It stands and must stand strictly upon its merits. It has received the generous recognition of hundreds of eminent and disinterested dentists, physicians, bacteriologists and pathologists from all parts of the world. It must, from necessity, occupy the place in dental and oral therapeutics that rightly belongs to it. So while we make no appeal to the baser instincts and sternly refuse to play to the pit and gallery, we earnestly seek to rouse scientific inquiry and the approval of all fair-minded and conscientious practitioners.

Samples and literature sent to any practitioner.

Dentacura Company, Newark, N. J.